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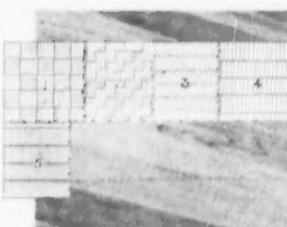
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VOLUME 26 • NUMBER 7 • MARCH 1957

IN THIS ISSUE

HERE BELOW (The New American Myth: Physical Unfitness)	5
CROSS-OVER PASS ON THE CURVE by Richard P. Coxe	7
HIGH HURDLE CLEARANCE by Percy Beard	8
COMPLETE GUIDE TO GOOD HITTING by Lew Watts	11
KEN BANTUM'S PUTTING FORM by Irving L. Kintisch	12
DEFENSE, TENNIS'S NEGLECTED ART by Don Klotz	16
MODERN EUROPEAN CONTROLLED INTERVAL METHOD OF DISTANCE TRAINING by John K. Cherry and Walter W. Boehm	20
GOLF AS A VARSITY SPORT by Robert V. Hirstein	28
BASEBALL GYM DRILLS by Peter T. Dyer	32
DEFENSIVE INFIELD STRATEGY by Charlie Trace	36
YEAR-ROUND INTRAMURALS by John W. Billingham	42
NEW EQUIPMENT	46
1956 STATE HIGH SCHOOL FOOTBALL CHAMPIONS	58, 60-61
NEW BOOKS ON THE SPORT SHELF	64
COACHES' CORNER (What Is a Track Man? by Ernie Gorr)	68
NATIONAL FEDERATION PRESS	72

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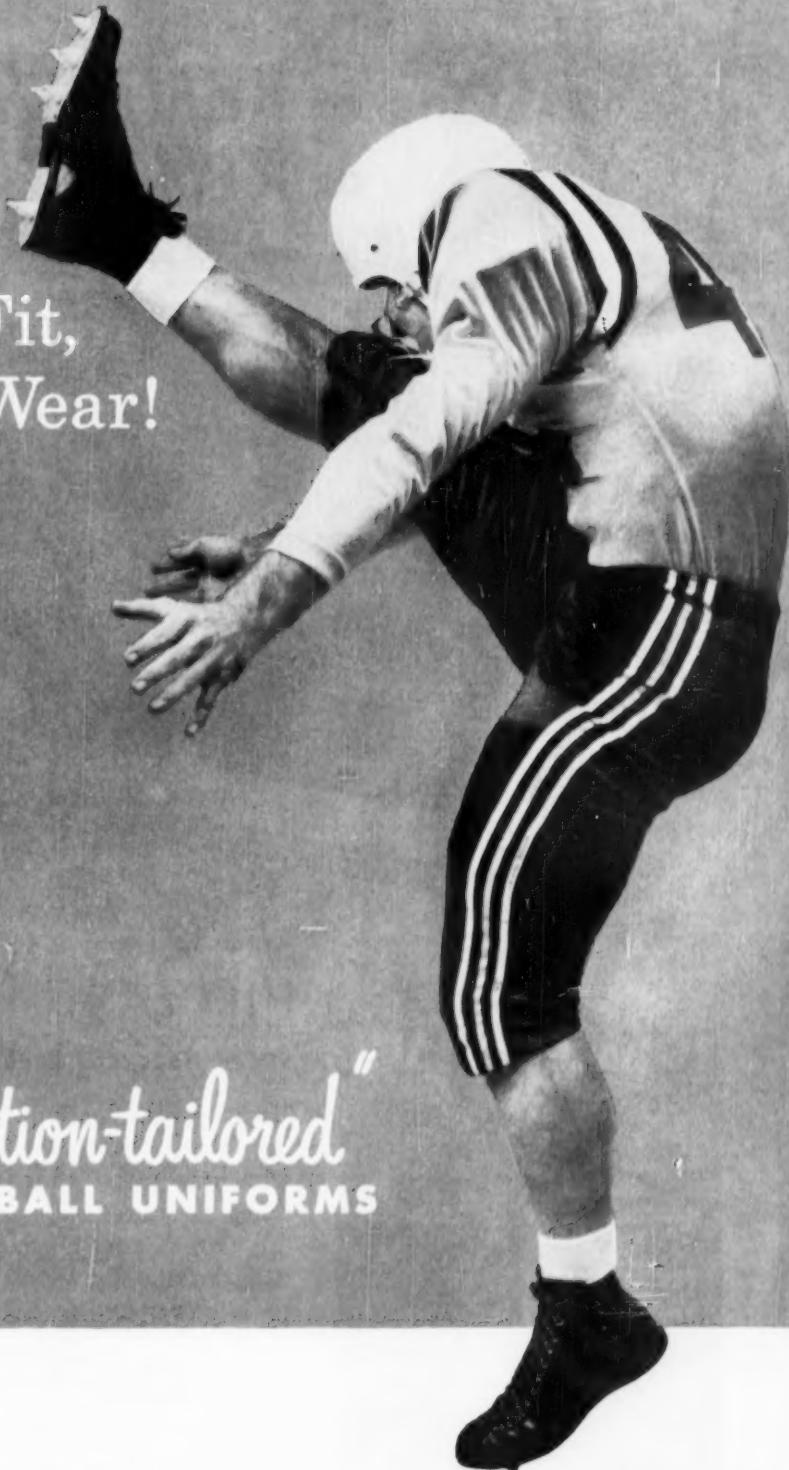
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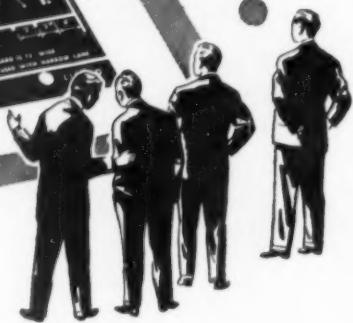
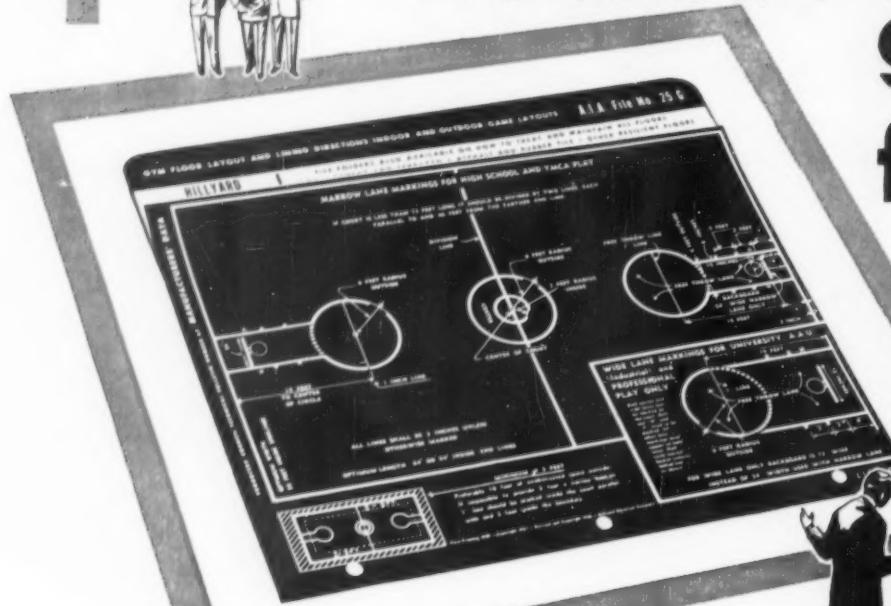
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The New American Myth:

Physical Unfitness

S America busting out all over with muscle, or is the Land of the Free degenerating into the softest nation in the world? That supercharged poser has everyone from just plain Mike to President Ike floundering for an answer.

Judging by the record-shattering proclivities of our athletes, America must be bouncing with vim, vigor, and vitality. Yet our physical fitness soothsayers insist that we're rapidly going from flab to worse. And, through a comedy of terrors, they've sold this bill of bad health to Washington.

The confusion over our physical fitness stems directly from a report by Dr. Hans Kraus and Ruth Prudden in the *New York State Journal of Medicine*. Mounted with scrupulous care, it summarizes an international testing bee among 7,000 children in the United States, Switzerland, Austria, and Italy. These children, aged six to 16, were subjected to a battery of six physical fitness tests (known as the Kraus-Weber Test). And the results were fantastic!

Only 42.1 per cent of the American boys and girls passed every test, compared to 91.1 per cent for the European youngsters!

When this shocker exploded into the headlines, the calamity howlers poured out of their dugouts. For years they had been decrying our lack of physical fitness, that our pneumatic-tire, foam-rubber way of life was softening us into a nation of weaklings. And the Kraus-Prudden report apparently lent backbone to their claim.

Aligned in bitter-T formation, the "unfitness" quarterbacks began barking their storm-signals. They pointed out that more than half of our military draftees are rejected every year, and that doubts exist about the physical fitness of most of the other 50%.

Then they turned the swift lightning of their tongues upon our hal-

lowed national pastimes. They declared that many of our sports seem to be monopolized by athletic "types." Football players must be large and muscular. Basketball players must be tall. And the average boy stands little chance of making the team.

Baseball, they said, must be analyzed in terms of exercise rather than batting averages. And on this score, the diamond sport has three strikes on it.

The "unfitness" soothsayers also noted that golfers have begun touring the courses in electric carts, and that fisherman no longer row. They roar out to their favorite fishing holes in outboard motors.

When their ululations hit a crescendo, the echo reached Capitol Hill. And President Eisenhower was shocked into immediate action. He summoned 30 sports celebrities and experts to a White House luncheon and from this informal huddle a plan quickly emerged. The President promised to create a Council on Youth Fitness at the Cabinet level. Meanwhile, he set up a Citizens Advisory Committee on the Fitness of American youth.

WITH Washington quivering from the physical fitness jitters and with the man in the street bewitched, bothered and bewildered over the paradox of a strong athletic front and a weak physical fitness spine, there remained one question—the \$64,000 beauty—that everyone forgot to ask. And that was: Could the Kraus-Prudden report be accepted at face value?

The answer, based on an extensive study of our physical education, athletic, and recreational structure, must be a loud and unequivocal "No!" The physical fitness controversy is just a tempest in a Dixie cup. America is about as much in danger of degenerating into jellyfish as the Yankees are of flopping into the cellar. Every day and in al-

most every way, we're pushing our physical fitness index higher and higher.

How can we be getting "weaker" when the average life span is steadily growing longer? Where children born in 1900 could expect to live a mere 45 years, today's baby can look forward to a ripe old age of 65.

And he'll present a more prepossessing appearance. Thanks to tremendous advances in nutritional science and physical medicine, the average incoming college freshman is an inch and half taller and 15 pounds heavier than his 1915 papa.

The military scales furnish a tip in the same direction. Whereas the average Civil War soldier weighed only 135 pounds and the average World War I soldier weighed 142 pounds, the World War II G. I. tipped the Toledo at 150.

Then what accounts for the high percentage of rejections for military service? The bare statistics are misleading. For one thing, our standards are higher than those of any other country. And the rejections themselves derive from several causes. Many boys have poor eyesight, a bad heart, or some other organic defect, while a great many others are deferred because of dependents. For this reason, the percentage of rejects is no more reliable than a rookie pitcher in the World Series.

IF American youth were growing flabby, it would certainly be mirrored in its athletic record. And on this score the evidence slices the Kraus-Prudden delicatessen extremely thin. Within the past year alone, the seven-foot standard in the high jump, the 80-foot mark in the shot put, the 9.2 "ultimate" in the 100-meters dash, and many other supposedly impregnable barriers have been hurdled.

Of the 23 college track records, 19 have been established since 1950! (Continued on page 70)

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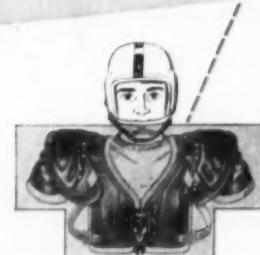
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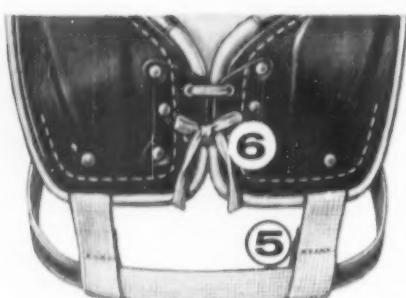
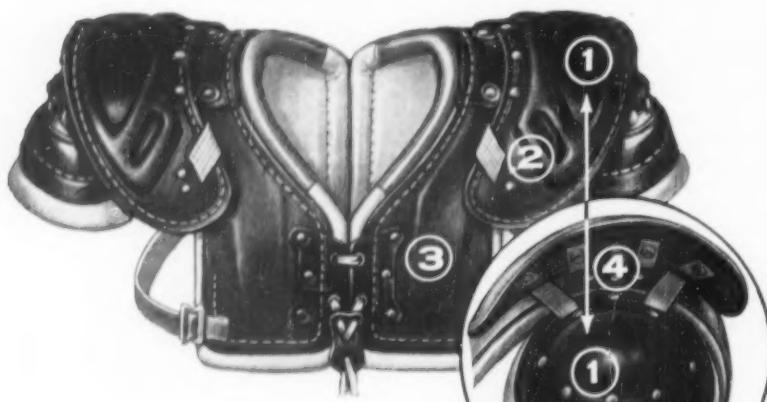
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Try a Cross-Over Pass on the Curve



Receiver sets up in right-hand rear corner. As incoming man hits "go" mark, receiver drives hard, moving gradually from outside of lane toward inner edge. Pass is a left-hand-to-right-hand exchange.

By RICHARD P. COXE

Sweetwater Union H. S., National City, Calif.

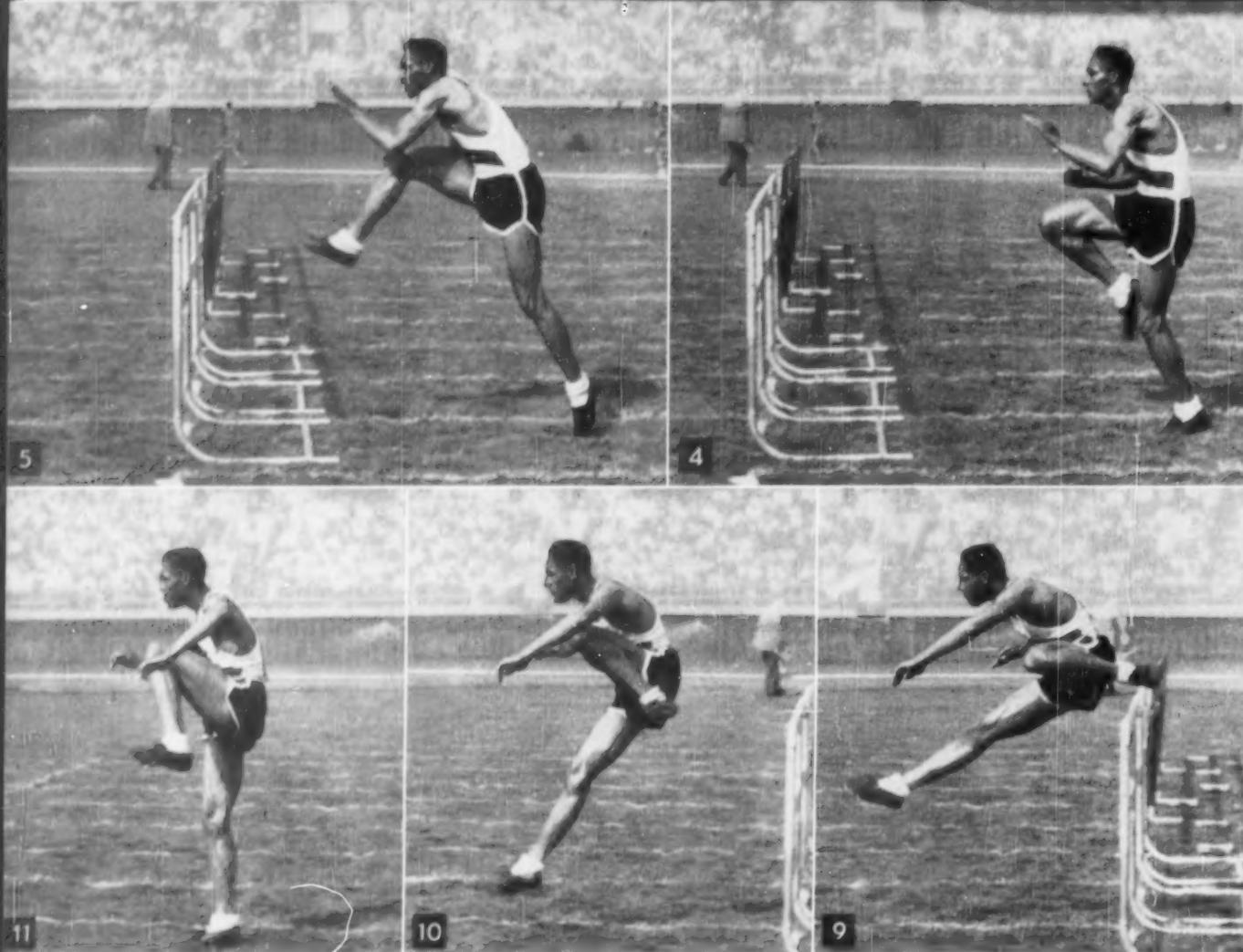
Most track coaches will agree that, given four boys with good leg speed, short relay races can be won or lost by the calibre of the baton pass. This is particularly true in the 440 relay. These same coaches would also agree that of the three passes in the quarter-mile relay, the first and third—the curve passes—are the most time-consuming and most difficult. If you're a mentor who can categorize yourself in this group, the cross-over pass may furnish the answer to the problem.

The basic problems in a curve pass are multifold. Approaching the passing zone, the incoming runner, who has been running near the inside of his lane, must adjust farther to the inside—or outside—of his lane to leave sufficient room for both he and his teammate in the passing zone. As he maneuvers for position, he must also maintain full speed until the pass is completed.

The outgoing runner, upon seeing his incoming teammate hit the "go" mark, must turn and start fast in an effort to build up to full speed as soon as possible. (We prefer a visual check of the "go" mark rather than a vocal call by the incoming man, to avoid confusion with the calls of the other teams.) In addition to this fast build-up of speed, the outgoing man must round the curve and keep in his half of the lane.

Through specific instruction and diligent practice, it's a relatively simple matter to develop smooth action on the part of the incoming runner, regardless of which of the four variations of the blind baton pass is used—right-to-left, left-to-right, left-to-left, or right-to-right.

The coaching of the outgoing runner isn't quite so simple.
(Continued on page 54)



High Hurdle Clearance

By PERCY BEARD

Former World's Record Holder (1931); Head Coach, University of Florida

THE most effective hurdle clearance is that which most closely approximates a normal running stride over the hurdle and which offers the least interruption in the running action.

Some of the mechanical principles involved in running are as follows:

1. The legs execute a continuous scissors action and the movements of each balance and contribute to the movements of the other. In general, the downward-backward motion of the driving leg is balanced by the upward-forward motion of the other, and vice versa.
2. The downward-backward swing

of the arms aids in counter balancing the upward-forward motion of the legs. Arms and legs must be co-ordinated, i.e. right arm down and back simultaneously with right leg up and forward.

3. The center of gravity of the body should stay in the same horizontal plane as closely as possible.

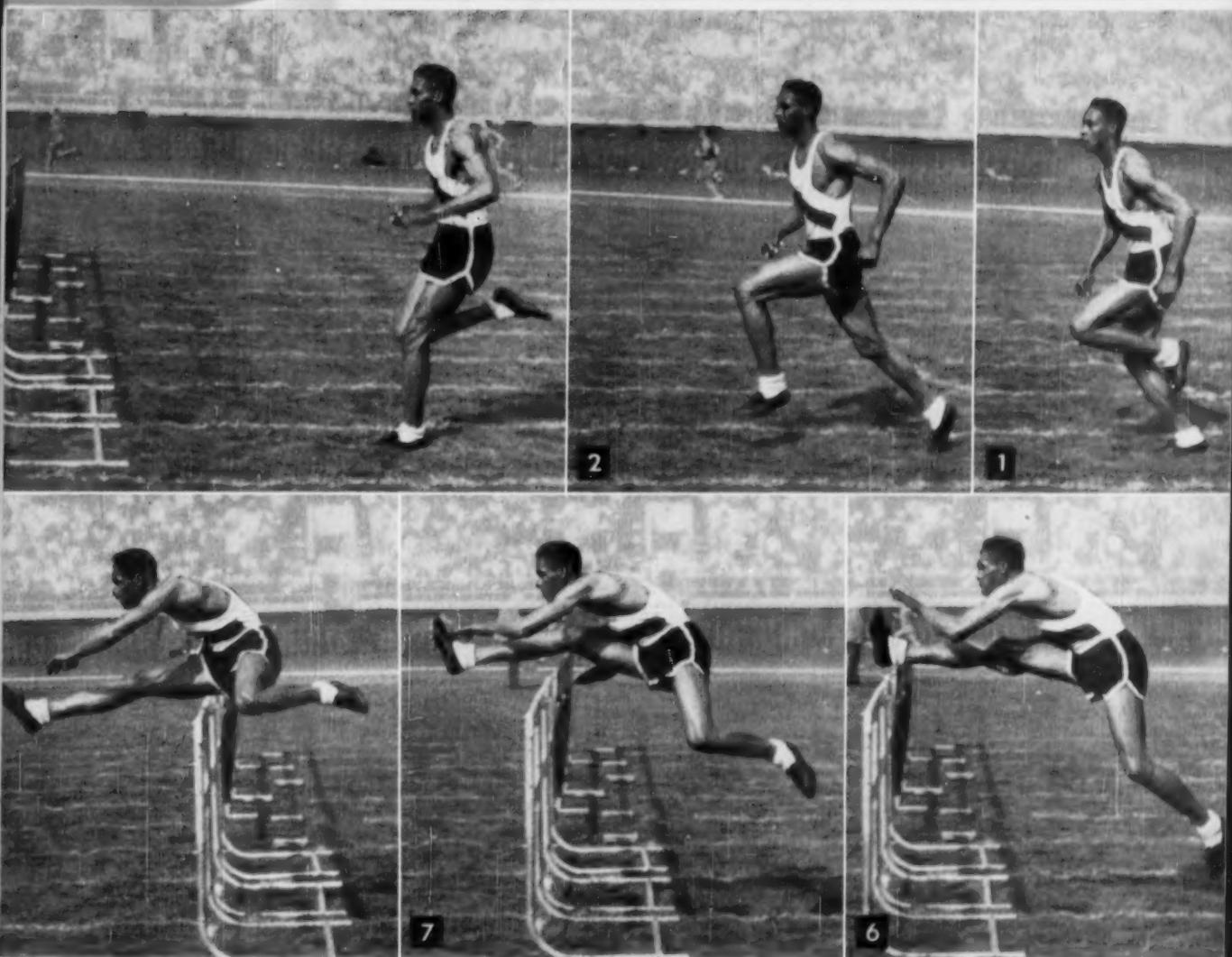
If the assumption made in the first paragraph is correct, then these same principles should apply to the stride over the hurdle. Since this stride is considerably longer than the others, some adjustments must be made in the normal running action, but the same principles apply.

In discussing such application, the three principles mentioned above will be taken in order as follows:

1. If the proper balance and effectiveness of the running action of the legs is to be maintained in the stride over the hurdle, then the action of the two legs should be co-ordinated so that the front leg starts its downward drive on the other side of the hurdle at the same time that the back leg starts moving forward and vice versa.

Because of the hurdle, the front leg cannot start its downward drive until the front foot is past the top

(Concluded on page 55)



OLYMPIC CHAMPION

LEE CALHOUN, Olympic Record Holder, 13.5 sec.

NOS. 1-2 clearly show relaxation characteristic of entire action. Note absence of strain in neck and face.

NO. 3: Foot on ground for take-off. Grass makes it difficult to judge extent to which heel makes contact with ground. Should be no more contact here than on any other running stride. Many hurdlers err in planting heel solidly.

NO. 4: Excellent leg action. Both forelegs are parallel, indicating relaxed knee lift and continuation of running action. Right arm shows beginning of double, or both-arms-forward action. When this arm reaches position shown in No. 3, it stays there until left arm starts forward motion. Then both thrust forward together.

NO. 5: Drive from ground shows good action in left leg, body and arms. Left foot delivers last possible ounce of power, driving hips upward and forward—important in efficient clearance. Upper body and arms are executing good, relaxed forward lean. Both arms are going forward together. However, right foot is too advanced at this point.

NO. 6 shows a slight rushing of back leg. It has started forward motion before front leg has reached position to start downward drive. Both arms continue to reach forward, left more than right.

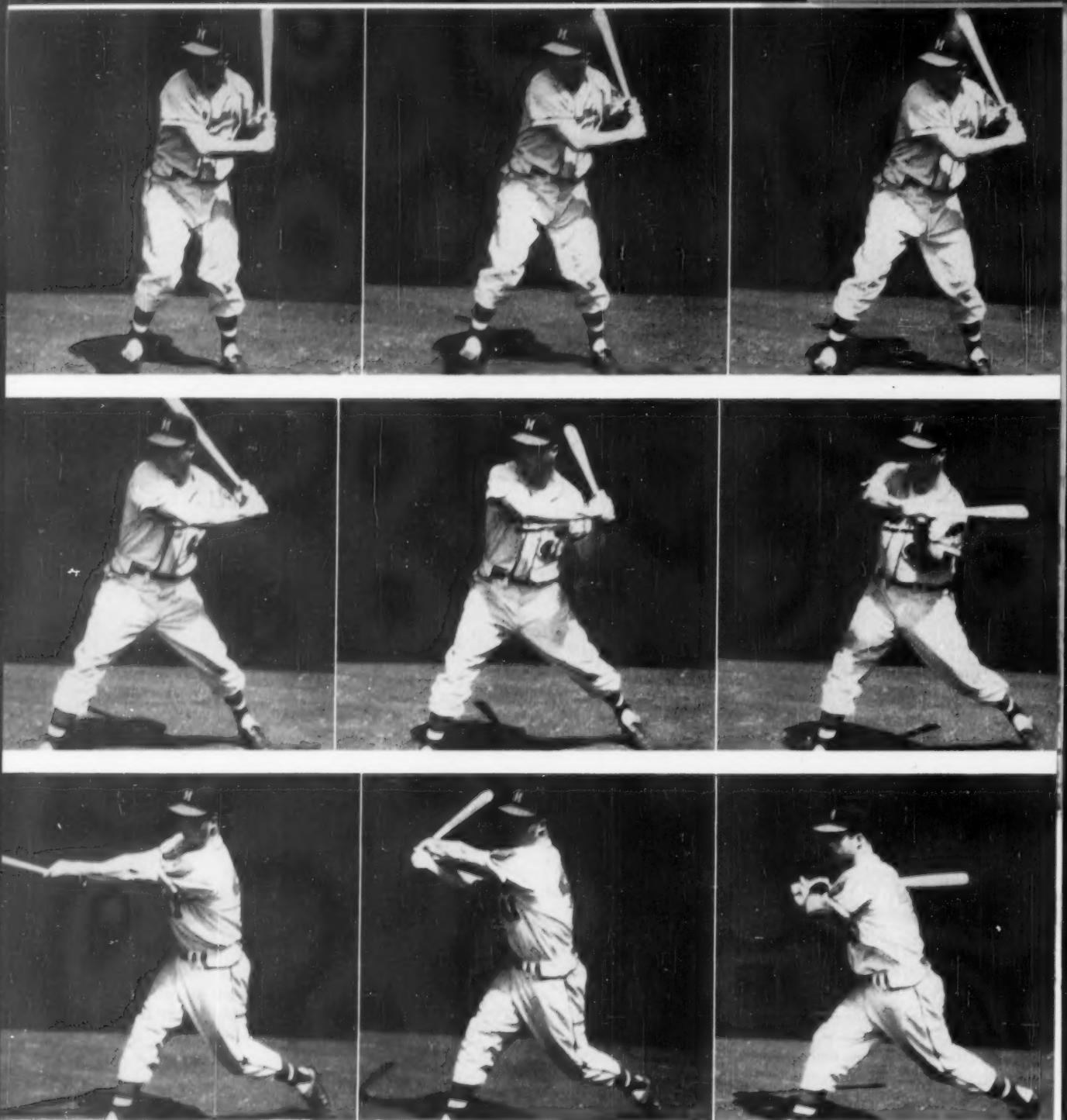
NO. 7: Front leg has started downward drive. Back leg is further advanced in its action than front—a continuation of too-early movement of this leg mentioned in No. 6. Body lean is excellent. Right arm is moving back.

NO. 8 shows that rushed back leg wasn't serious, since it's still behind top bar of hurdle. I'd prefer to see it a little further back than it is. Also shown is an unusual delay in action of left arm. It hasn't yet started its backward sweep, though left leg is well-advanced.

NO. 9: Still no backward movement of left arm—a very unusual delay. Body mechanics involved in running indicate that downward drive of front leg, forward motion of back leg, and backward sweep of left arm are simultaneous—each aiding and abetting others. Such concept would have left arm passing left knee at this point. Right arm is moving forward into normal running position.

NO. 10: Excellent maintenance of body lean. Left arm just starting its backward sweep. Ordinarily you'd expect it to be even with or past left foot at this point.

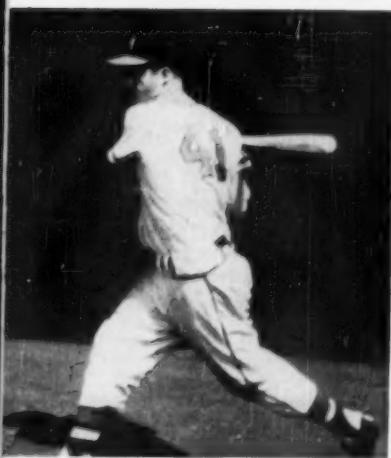
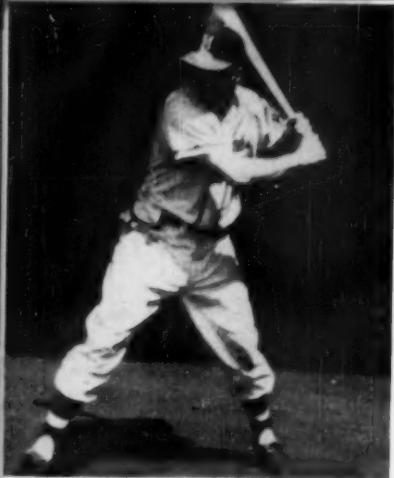
NO. 11: Landing position is good. Contrast left arm position with that in No. 2. Whole action of left arm from No. 8 through No. 11 lacks vigor used in sprinting.



EDDIE MATHEWS, Braves' slugger, possesses one of the classic swings in big league ball, and this remarkable sequence is worthy of detailed study. Note first the beautifully relaxed but alert stance with the back arm fairly close to the body, the front arm relaxedly bent, the feet no more than shoulder-width apart, and the eyes trained on the pitcher over the right shoulder. As the pitcher delivers, Mathews takes a short sliding step into the ball and brings the bat around beautifully with a free, level swing, meeting the ball just in front of the plate. In accordance with the

tenets of good hitting, he hits off a straight front leg and a bent rear member (up on the toe). After contact, the bat continues to the opposite side of the body with the wrists rolling over. Note the perfect stability of the head from start to finish. Mathews doesn't "knock himself out" when he swings—he makes no apparent effort to overpower the ball. He concentrates on meeting the ball with a perfect swing—bringing the power of the shoulders, hips, arms, and wrists into the ball with a smooth level cut. Where this is done correctly, the power will always take care of itself.

(Photos from Ethan Allen's "Winning Baseball," A. S. Barnes & Co.)



BASEBALL men generally agree that really great hitters are born, not made. This doesn't mean that a man with reasonably good physical and mental equipment cannot develop into a good hitter. Very few ballplayers are really outstanding natural hitters. The skill must be developed.

Good hitters come in all shapes and sizes, with a wide variety of physical attributes as well as handicaps. While good eyesight would certainly seem to be a requisite to successful hitting, even this isn't necessarily so. Let's say that well-trained eyes, well-developed reflexes, and good coordination are the real essentials.

By the same token, there's no one batting form that's recommended for all hitters. There are players who outrage the basic principles and yet are good hitters. And there are men with flawless styles who still can't hit. Generally speaking, however, practically all the better hitters are distinguished by a well-balanced stance, short stride, level swing, quick hand-action, and good follow-through.

The real key to success is meeting the ball squarely. This means that the player shouldn't try to overpower the ball. He should concentrate intently on it from the time it leaves the pitcher's hand until it meets the bat. If a man just meets the ball squarely, both his batting average and the extra base hits will take care of themselves.

FUNDAMENTALS OF GOOD HITTING

The art of hitting can be divided into six basic fundamentals—stance, eyes, stride, hitting action, swing, and follow-through. The average player must strive for a style which will combine these essentials in the way best suited to his own capabilities.

Good tools are of prime importance to any craftsman and this, needless to say, applies to any man stepping into the batter's box. He should use a bat which he can handle so facilely that it becomes almost a part of him.

Size—that is, length and weight—will vary according to his strength and other physical attributes. The important consideration is *bat control*. The bat should permit easy handling and enable the player to cope effectively with any kind of pitch or pitcher.

Recently there has been a trend to light bats, even on the part of mature and powerful professionals. A light bat allows greater control and makes for faster hand action and a better wrist snap.

Actually, no young player should be so impressed by a big league star that he'll try to use the same size bat, despite entirely different physical capabilities. Rather he should look for a bat that feels comfortable and is adaptable to his own size, strength, and coordination.

THE STANCE

Two words form the keynote for the best stance. They are "Be comfortable." The hitter should prepare for the pitch by assuming a stance which will find him physically relaxed, yet mentally alert.

The grip on the bat should be firm, but not so tight as to cause a tension which can impair proper coordination and a fluid swing. As the bat is actually swung, the grip tightens to the point where it's very firm at the moment of impact. Gripping the bat toward the fingers will give the batter better "feel" and greater bat control.

Wrists: To assure the desired rolling of the wrists, the second and third knuckles of the two hands should be aligned so that a flat surface is formed by the backs of the hands.

The wrists should be cocked in readiness so that no motion will be lost in starting the swing and whip-

(Continued on page 48)

By LEW WATTS

Former Professional Player and College Coach

Complete Guide to Good Hitting



1



2



3



4



5



Winning Penn Relays With Toss of 59'1 $\frac{3}{4}$ "

NO. 1: Bantum bends over his right leg as his left begins reaching across the circle. While his upper body faces the rear, his right foot is at an angle. His upper body achieves a parallel-to-the-ground position.

NO. 2 shows the drive he gets from the right leg in aiding him get across the circle.

NO. 3 shows an important phase of any putter's form, and that is the ability to get the right foot back under the body. The foot has been quickly dragged across the circle with the toe coming around about 30 to 40°. The upper body is still turned toward the rear but has risen slightly.

NO. 4: Bantum begins his drive even though his left leg isn't planted on the ground. The left arm begins its pull.

NO. 5: Both knees are bent as he continues his drive into the shot.

NO. 6: Up to this point, the shot has been moving across the circle and gaining momentum. Here Bantum adds to that momentum by beginning his arm thrust.

NO. 7: He continues the arm push while his body rides over a straightening left leg. This leg aids in adding height and impetus to the shot. The left arm helps get the upper body around.

NO. 8: While Bantum has driven onto the left leg, note that the center of his body weight would fall behind his left leg. On some of his better puts, this point would be over the foot.

NO. 9: With the shot gone, Bantum goes into his reverse as a result of the terrific push of the right side of the body. The reverse is merely to stay in the circle.

NO. 10: The putter concentrates on staying in balance inside the circle although he apparently is watching the shot.

Ken Bantum's Putting Form

By IRVING L. KINTISCH

Assistant Track Coach, Manhattan College (New York)

A NY analysis of what has made Manhattan College's Ken Bantum the champion and record holder that he is, must necessarily start with a low bow to a number of his predecessors. From each, he has learned a valuable lesson.

Charlie Fonville of Michigan opened the flood-gates of exceptional performances with his 58- $\frac{3}{4}$ heave in 1948. From 1934 until that memorable day, the world's record had been held by Jack Torrance, the giant (6'5" 260 lb.) LSU putter whose 57-1 toss had been accepted by many leading coaches as the ultimate in shot putting.

Yet, here was Fonville, three inches shorter and 65 pounds lighter, exceeding the world's record by nearly a foot! With his exceptional speed, Fonville showed the shot-putting fraternity that it could be done.

Within a year and a half, Fonville's record was gone. Jim Fuchs of Yale set the new standard at 58-4 $\frac{3}{4}$ and in 1950 raised it again to 58-10 $\frac{3}{4}$. His contribution was the development of a style in which his body was bent sideways toward the back of the circle with his left

side completely extended.

His upper body, at the rear of the circle and again at the center of it, was quite often parallel to the ground. This enabled him to lengthen the distance through which he could apply momentum to the shot with his body and arm.

As his body moved to the center of the circle, his right toe turned so that it faced the rear. The backward pointing toe prevented his hip from rotating around and into the shot and forced the hip to move upwards and straight out in the direction of the put.

Had the ultimate been reached yet? Apparently not. In 1952, Parry O'Brien appeared on the scene and became the surprise Olympic winner over Fuchs with a put of 57-1 $\frac{3}{4}$. The following year at the Compton Relays, he raised the mark to 59-2 $\frac{3}{4}$. In 1954, he raised it again, this time surpassing the 60' barrier by 10 inches!

Since then, he has bettered the accepted record many times. His unofficial marks which are up for approval are 62-6 $\frac{3}{4}$ and 63-2. These were made in pre-Olympic prep meets.

O'Brien's contribution was perhaps the greatest. First, he adapted Fuchs' form to make it more practical for the majority of putters. Other changes were then made until there was hardly any similarity at all.

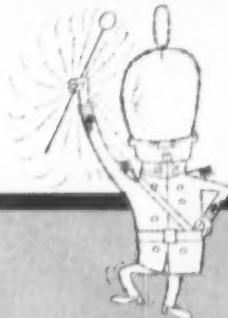
Instead of leaning sideways-backwards, O'Brien faced directly to the rear, with his right foot pointing in that direction. He bent at the waist and at the knees to achieve a low back position parallel to the ground, but rose as he moved across the circle. His upper body remained twisted toward the rear, but his legs and trunk had extended and his toe moved about 30° forward.

He was fast across the circle. And because the shot continued to accelerate as it moved across the circle, his shot-putting action could be described as starting at the rear of it.

Second, O'Brien was a confirmed devotee of weight-resistance exercises. In a conversation with the writer regarding his weight-training program he remarked, "I do a lot of it. I don't think any shot-putter can get too strong." And it's



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true that it's now almost impossible to find a shot putter with any degree of ability who at one time or another hasn't used weight-resistance exercises to increase his strength.

As a schoolboy in the New York City area, Bantum's best performance with the 12-lb. shot was little more than 52 feet. The style he used was an ineffective interpretation of the O'Brien form.

At Manhattan College, Bantum learned to use his body more effectively. At every opportunity, the writer described the styles used by the shot-put greats. Fonville's speed, Fuchs' body position, and O'Brien's adaptations and his strength were discussed. Practice sessions were long and details meticulously gone over. As a freshman, Bantum's best mark was 48-3.

In reviewing the season with him, it was agreed that he was learning the form but that he most needed additional strength. A program of weight training was begun. At the beginning, he had difficulty in lifting 100 pounds in an overhead press. Deeply instilled in him was the unfounded fear that weight lifting would make him "muscle bound" and thus hurt his chances for success.

Also, he envisioned possible injury, particularly since he encountered great difficulty with what he figured were light weights for a man of his size. His program of weight training was spasmodic. But in spite of this, he lifted enough to become somewhat stronger. This was reflected in his best performance of 54-10½ as a sophomore.

He began to take weight training more seriously. A regular routine was finally set up. His shot-putting workouts were as always long and hard. Once warmed up, his throws were hard but his emphasis was on correct form and not distance.

Slowly, he developed a kinesthetic sense of what he was trying to make his body do in the circle. Rather than imitate, he began to improvise, adapt, and simplify O'Brien's technique. What has evolved is his own form.

The result of all this hard work was unbelievable development. Shortly after setting a new field house record at West Point with 56-11½, Bantum easily won the 1956 indoor IC4A crown with 55-6¾. At the Penn Relays, he broke Fonville's meet record by more than three feet with a prodigious heave of 59-1¼. He set an assortment of collegiate records when he became the third man in history to exceed 60 feet. This he did by ½ inch at the NCAAs.

ONE of America's better shot-putters as an undergraduate of New York University, Irv Kinisch has gone on to even greater renown as a field coach at Manhattan College (N.Y.). A remarkable technique diagnostician and teacher, he's done a tremendous job of developing Ken Bantum into one of the five best putters in the world. This is his third article for Scholastic Coach. "Weight Training for Weight Men" appeared in the February 1955 issue, and "Four Basic Shot Put Principles" in February 1956.

At the 1956 National AAU he snapped O'Brien's string of over 100 successive wins with a new meet record of 59-1½. A 59-9¾ effort at the Olympic trials earned him a second to O'Brien and an Olympic berth.

Bantum's major assets are:

1. **Size:** He is 6'6" tall and weighs 240 pounds.

2. **Speed and coordination:** He has run the 120 H.H. in :14.7 sec. He was a member of the 1955 Penn Relay shuttle hurdle champions. His speed across the circle is so deceptively fast, that it led Corder Nelson of *Track and Field News* to write about Bantum in summarizing the Olympic trials, "shooting across the circle with no dip." A glance at the pictures accompanying the article will reveal just how low he does get.

3. **Desire and pride:** He doesn't measure his workouts by the clock or the number of puts taken. He has worked out in the rain when the less hardy have gone home. His workout ends when he's tired and his practice sessions include an infinite amount of running and hurdling. He's not content with just winning. Every performance must be a good one.

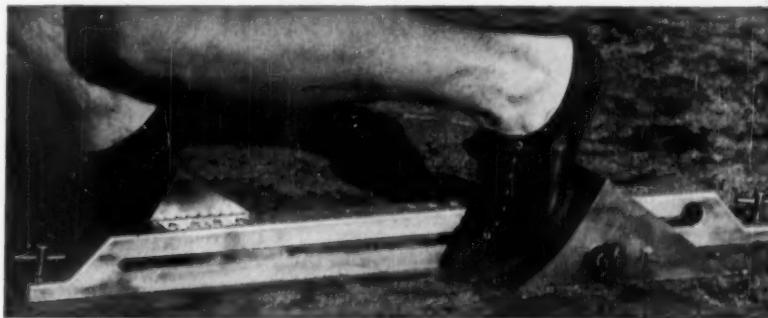
4. **Strength:** As a result of his weight-training program, his strength has increased. This can be measured in terms of his ability to raise 200 pounds in an overhead press with a great degree of confidence.

What does the future hold in store for him? I honestly feel that if anyone will break O'Brien's records in the near future, Bantum has the best chance of doing so.

When 59 feet was yet to be achieved, some fearless coaches were predicting an eventual 62 feet. Now that that mark has been surpassed, I am convinced that 65 feet is but a matter of time.

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100 Yd. Dash	9.3	James J. Golliday	Evanston, Ill.	5/14/55
220 Yd. Dash	20.2	Melvin Patton	Los Angeles, Calif.	5/7/49
120 Yd. H. H.	13.5	Richard Attlesey	Fresno, Calif.	5/15/50
220 Yd. L. H.	22.3	Harrison Dillard	Salt Lake City	6/21/47
440 Yd. Dash	46.0	Herbert McKenley	Berkeley, Calif.	6/5/48

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800 Meter Run	1.47.7°	Tom Courtney			Murchison and
400 Meter Run	46.7	Charlie Jenkins			Morrow
100 Meter Dash	10.5	Bobby Morrow	110 Meter Hurdles	13.5°	Lee Calhoun
200 Meter Dash	20.6°	Bobby Morrow	1600 Meter Relay	3.04.8	Jenkins, Jones
					Mashburn and
					Courtney

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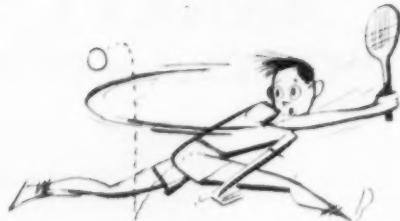
Richard W. Arnett

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DEFENSE

Tennis's Neglected Art

By DON KLOTZ, Coach, University of Iowa



SO MUCH emphasis has been placed on offense in tennis that defense is badly neglected or even ridiculed. Derogatory terms like "dinker" and "pusher" discourage a young player from doing anything other than "hitting" the ball. He feels that he must attempt to play an offensive game, the so-called "big" game, all the time.

Young players frequently remind me of untrained boxers who swing wild punches with no discrimination and little defense. Occasionally one or the other is hurt by a lucky blow, but most of the match, like average tennis, consists of a series of misses—a comedy of errors. The strongest fighter (hitter) usually wins.

Tennis players, like boxers, must learn when to hit offensively and when to "cover up." That is, a forcing stroke by the opponent should be parried with a defensive return. A smart tennis player, like a clever boxer, can easily beat a much stronger opponent with a good defense and offensive strokes (punches) when good openings occur. A well-balanced game calls for a defense against an opponent's attacking shots coupled with crisp offensive strokes when the opportunities arrive.

Lest I be misunderstood in discussing defense, let me say right here that the pure "dinker" at one extreme is just as ridiculous as the "hitter" at the other end of the power scale. (The dinker, however, will usually win many more matches than the hitter.)

Generally, there seems to be no middle ground where offense and defense are concerned. You're either one extreme or the other. There's no shading in the quality of strokes from offensive to neutral and on into purely defensive returns. You're either a dinker or a hitter.

How silly! All other sports emphasize defense. Teams take pride in being recognized for their defensive ability. Why should we neglect it so badly in tennis? Why this ridicu-

lous emphasis on offense to the exclusion of defense?

Statistical studies show conclusively, as Tilden once said, that matches are never won; they are always lost. Matches are lost through errors, not won by placements. Placements, including forced errors, seldom account for more than 35% of all points made in a match. The other 65 to 75% are errors, outright gifts to the opponent's point score.

Tennis differs strategically from most sports in its method of scoring. In football, basketball, and baseball, an error will merely present the opponents with an opportunity to score. Once the opportunity is gained, they must still capitalize on it. In this attempt, the initiative is often lost and the scoring opportunity gone.

But in tennis an error gives the opponent a point instantly. If a return is weak, an opponent must still capitalize on it. But an error gives him the point with no follow-up on his part. Could anything indicate more clearly the importance of defense?

EFFECTIVE DEFENSE

What do we mean by defensive tennis? As an illustration of a purely defensive yet effective game, here's a true story from one of our annual Big Ten tennis tournaments of several years ago.

One of my players named Bob had some of the most fluent and beautiful flat drives I've ever seen. He could hit a bullet-like ball with remarkably little effort. However, he tended to over-hit and hence made many errors.

In the second round of the singles, he played a courageous opponent named Steve whose strokes were inferior but who possessed plenty of will to win. During the course of the match, I noticed that Bob was stroking well and that Steve was scrambling all over the court, desperately returning Bob's shots as best he

could. In one game, Bob hit two clean placements past Steve from the baseline. I noted also that he was making his usual high percentage of errors.

In a surprisingly short time, the boys came off the court, the match finished. Bob's uniform was clean and he was barely perspiring. Steve, by contrast, was sweaty and soiled from head to foot. He had taken numerous falls while lunging desperately for Bob's drives into the corners.

"Score, Bob?" I inquired.

"Aw, he won 6-2, 6-2," grunted Bob. "My forehand wasn't working too well." He slouched off to the fountain.

I turned to Steve, "Congratulations, Steve. You certainly showed what determination and defense can do."

"He should have won," apologized Steve. "He was hitting the ball. I wasn't."

"Now you know better than that, don't you, Steve?" I chided.

"Well, what else could I do? I couldn't hit with him. He was too powerful for me. All I could do was run and try to hit the ball back as best I could."

"Precisely," I agreed. "You threw up the best defense that you could muster. You got most of your shots back. He made too many errors in his attempts to be aggressive. You played it smart and you won. Don't apologize for playing defensive tennis to win. The man at the scoreboard doesn't ask *how* you won, but *did* you!"

"Thanks, coach, thanks a lot. I hadn't appreciated winning by means of a defensive game."

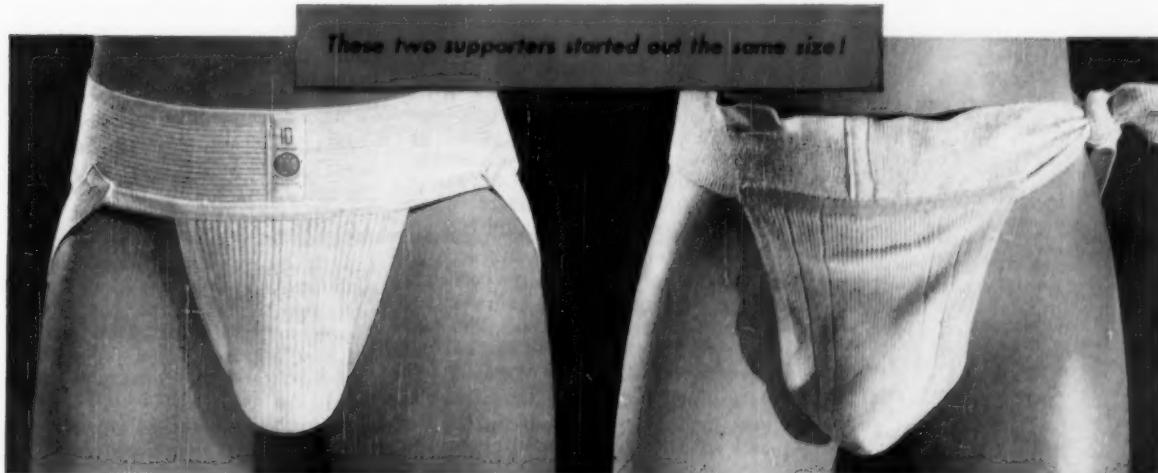
Steve played purely defensive tennis—and won, or should we say, rather, that Bob lost. The mistake so common in average tennis is the attempt to hit all strokes offensively.

Most strokes are hit offensively without thought to the ability to keep them in the court. Opponent returns come with varying degrees of difficulty. We may classify the

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quality of them under three simple headings:

1. It is weak enough to force the opponent with our choice of return.
2. It is neutral in its effect. That is, we can make a return which isn't generally forcing or weak.
3. It is a shot which is definitely forcing and should be returned defensively. As in boxing, our opponent has "punched" us hard enough to require us to throw up the best defense we can until we're again able to take the offense.

To analyze further, we're going to find ourselves in defensive situations for two reasons, generally: (1) as a result of good shots by our opponent, or (2) due to our own errors in footwork and judgment, leaving us in a poor position to stroke well.

In either case, we should do our best to get the ball back over the net with a minimum of errors. Attempting to hit well under these conditions will only result in too many errors. Every one of these errors is an outright contribution, a gift, to our opponent's point score. Statistics show conclusively that matches are lost through errors, not won by placements. This fact places tremendous importance on the defensive side of tennis, particularly when the situation calls for defense.

If your opponent has hit a good shot or you've made an error in judgment and are off-balance, try to make your returns as deep as possible but be sure to get that ball back into your opponent's court.

If your opponent stays on the baseline, don't be afraid to hit the ball with less speed, well above the net, and as deep as you can without making too many errors. He won't often force you from a deep return that has a high bounce. On the contrary, his returns are likely to lose their sting or even become weak, permitting you to take the offense again.

If his shot is really tough to handle, then just aim for the middle of his court and hope for the best. Does this sound like giving up? Not at all! It's true that your return may be weak and he may come into mid-court and force you with a drive to the corner followed by a net attack. He may even force you from the baseline.

Keep in mind, however, that every error you make is an outright gift of one point to your opponent. If he scores a placement against you, disregard your injured pride and congratulate him. Remember, an opponent can score only one point as a result of a placement—unless you become frantic and give him a succession of errors in a desperate at-

tempt to match it with one of your own.

The percentage of errors made in attempting to return forcing shots offensively is too high. It just isn't intelligent tennis. A defensive return would reduce this error percentage to a very low figure. Furthermore, you force your opponent to make at least one more stroke in trying to win the point. Your defensive returns keep the pressure on him to sustain his hitting.

It's much more difficult to play offensively than defensively. Your defensive game will induce the opponent to make many errors and indifferent returns instead of the expected aces. Don't let your pride force you to keep trying to gain most of your points from placements. Be realistic. In scoring, his errors are worth just as much as your placements!

It's customary to think of defensive returns in terms of weaknesses which our opponent can capitalize upon. On the contrary, a surprisingly large percentage of your defensive returns will turn out to be forcing. For example, let's say you're forced by a fine shot and you try desperately to just get the ball to the center of your opponent's court.

Under such circumstances, your aim will naturally be poor and your shot is likely to fall anywhere in your opponent's court. It may drop just over the net and catch your opponent flat-footed deep behind the baseline. He may not even reach the ball. Or if he does get there, he makes an error or a weak return for your benefit.

OTHER POSSIBILITIES

Another possibility is that your desperate return will be moderately high and deep, forcing him to take a half-volley at the baseline or to fall back and hit a high bounce from which he makes either an error or a weak return. There are many other similar possibilities, all in favor of the defensive return. Remember some of them? Yes, and you apologized for a shot which you didn't really expect to hit, didn't you? Don't apologize! Take pride in defense instead. I've observed that nearly half of all defensive returns result eventually in points for the defensive player.

If your opponent follows his forcing shot to the net, don't hesitate to throw up lobs, particularly if you're off-balance. Try to make your lobs fall into the back court. Few average players have effective overheads when forced to hit them from

(Concluded on page 57)



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Modern European Controlled Interval Method of Distance Training

MOST American track enthusiasts are painfully aware of the supremacy of European distance runners. Proof of Uncle Sam's inferiority is borne out by the statistics. Through September of the 1956 season, no fewer than 41 Europeans produced better times at the 1500 and mile distances than the best Americans. And a similar comparison at the 3- and 6-mile distances would reach relatively astronomical proportions.

This paper is presented in an effort to fill the need for specific, detailed information in American coaching literature and to sell American coaches and runners on European training methods.

HISTORY

The past two decades have seen a revolution in distance running which has left Americans far behind. The first note to herald coming improvements was in 1939 when the German, Rudolph Harbig, coached by his countryman, Woldemar Gerschler (more of this man later), set new world's records at 400 meters (46.0) and 800 meters (1:46.6).

These marks, coming out of Nazi Germany at the time of its "Aryan Superman" propaganda, were so superlative that they met with great disbelief. And it wasn't until much later that the skeptics became convinced it was possible to run that fast.

Next on the scene arrived the Swedes, Haegg and Andersson, who rewrote the record books during the war years. Other Swedes with their *Fartlek*, or speed play system, remained supreme up through the 1948 Olympics.

The period of 1946-52 saw the rise of Zatopek, who demonstrated, despite dire predictions that he would "burn himself out," that no one had realized what tremendous work-loads the human body could profitably take on without harm.

Finally has come the recent greats: Bartel (Luxembourg), Pirie, Bannister, Chataway (Great Britain), Landy, Bailey (Australia), Kuts (Russia), and the fabulous Hungarians—Iharos, Tabori, Roszavolgyi, and Roz-

snyoi, to name a few—who've kept the world reverberating with the clatter of broken distance-running records.

All of these men have one general training method in common, and that is interval running. This embodies covering many more miles per day than formerly believed possible, running short intervals at fast pace with short rest periods interspersed, and a year-around training program.

The man with the first and the most disciples is the German, Gerschler, who evolved the Controlled Interval Method. The vast majority of European runners are using his identical technique, or one essentially similar to it such as that of Franz Stampfl, whose book, *Stampfl on Running*, is a must for any modern-thinking coach.

U. S. FAILS TO KEEP PACE

What have been the reasons behind the relative downfall of our runners? Foremost is the inadequacy of our coaching methods. The split-season method (cross-country and track) is a failure. A man cannot run competitive races on Friday or Saturday and attempt to develop stamina during the week without the unpleasant by-products of mental and physical fatigue.

The American who desires to attain current international standards is going to have to run the year around, with one season for training and another for competing.

Secondly, due to World War II, information was slow in reaching us; and when it did begin to filter through, it was inadequate for several reasons. The Swedish *Fartlek*, which was first heard of, proved unadaptable because of climate and terrain, and because it's a "philosophy" of running which cannot be learned from books but must be experienced by training with a runner who knows the method.

Later articles on interval running lacked specificity regarding the four variables involved, and our runners met with discouragement as they attempted paces too fast and work-loads beyond their ability.

Finally, there has been a shameful

THIS magnificent treatise on the modern European controlled interval method of distance training, now being adopted all over the world, is the handiwork of two profound students of distance running—Dr. John K. Cherry, Captain USAF at March AFB, Calif., and Walter W. Boehm, 1st Lt. USAF, currently stationed in Rabat, Morocco. Both men have illustrious running backgrounds. Dr. Cherry lettered three years at U.S.C., while Lt. Boehm starred at California Poly and San Francisco State. (He just missed making the U.S. Olympic Team.) They refined and synthesized their ideas a year ago when stationed at Lockbourne AFB in Ohio.

reluctance on the part of the American track coach to adopt new methods, despite overwhelming evidence of their superiority, and of the antiquation of what they were using.

A word is in order on the few runners and coaches who have converted, and on some American successes. Jim Lea, the great Southern California sprinter, is an advocate of interval training. He attributes his world 440 record of 45.8 to it, and has been observed by the author doing 15 x 220, averaging 23.5 seconds, in an afternoon.

The majority of our Olympic distance runners did interval training, but not as intensive as necessary, or started it early enough to compete on equal terms with the men they met in Melbourne.

FOUR VARIABLES

Any method of interval training embodies four main factors, namely:

1. The total distance covered per day.
2. The distance and number of intervals run.
3. The pace.
4. The rest or recovery periods.

There are many types of interval training currently in use in Europe, but all are variations of Gerschler's Controlled Interval Method, in which the total distance and rest periods are

By JOHN K. CHERRY and WALTER W. BOEHM

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fixed, and intervals of varying distances (depending upon the runner's need for "speed" or "stamina" work) are run at paces which are closely regulated, are based on the man's previously demonstrated ability, and are systematically speeded as training progresses over an 8-month period.

These four factors shall now be discussed in detail, on the assumption that the runner under consideration is a physically mature individual who has been running 2-3 years. (Younger and less mature men will be considered later.)

Total Distance Covered Per Day should amount to an average of 9 miles, divided into three phases as follows:

Phase 1: 3-mile warm-up period.

Phase 2: Interval running of 2½-3½ miles.

Phase 3: 3-mile taper-down period.

Phase 1 should be run over a soft, grassed surface or on sawdust spread over a lane inside the pole of the track. It's run at an easy jog in the first and third miles, allowing the runner to gradually speed his pace to an easy stride during the middle mile.

Phase 2 should be run on the track or, if possible, over a measured grass surface. Each interval is accurately timed (and recorded if desired) as the runner attempts to hit the pace for which he's scheduled and which mustn't be exceeded. Periods between intervals are spent in walking and resting.

Phase 3 is run at an easy pace, again preferably on grass, in a park, etc., and should bring the daily total to about 9 miles. In the latter phase the runner jogs and runs as he feels, simulating *Partlek*.

Interval Trained At varies from 220 yards to 1½ miles, which fall naturally into groups:

1. Speed intervals—220, 275, 330 yards.

2. Fast pace intervals—440, 550 yards.

3. Race rhythm intervals—660, 1100 yards.

4. Endurance intervals—1½ miles.

The first two groups—speed and fast pace—often present the more difficult workouts, since the 275-330 and 550 intervals are extensions of the 220 and 440 pace over a longer distance. They accustom the runner to performing at pace faster than his race.

660 and 1100 yards present the opportunity to run repeatedly at a pace analogous to the rhythm of the race; and along with the 1½ mile intervals build endurance and teach the runner to maintain the "steady-steady" pace necessary to long distance running.

For the middle-distance runner, 330 yards would be used as a fast pace and 550 yards as a race-rhythm interval, with 1100 yards serving as endurance runs.

The number of intervals run in a given workout depends on the interval used and the race the man is training for. In general, the total distance should approximate 2½ to 3½ miles. For example, a workout of 10

METHOD OF CALCULATING PACE OF GIVEN INTERVAL

Distance	Prog's'n	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
220 yds.	1 sec.	8-7	7-6	6-5	5-4	4-3	3-2	2-1	not run
275 yds.	1	11-10	10-9	9-8	8-7	7-6	6-5	5-4	not run
330 yds.	1	13-12	12-11	11-10	10-9	9-8	8-7	7-6	6-5
440 yds.	2	23-21	21-19	19-17	17-15	15-13	13-11	11-9	9-7
550 yds.	3/2	31-28	28-25	25-23	23-21	21-19	19-17	17-15	15-13
660 yds.	3	41-38	38-35	35-32	32-29	29-26	26-23	23-20	20-17
1100 yds.	5	60-55	55-50	50-45	45-40	40-35	35-30	30-25	not run
1½ miles	12	1:30-	1:17-	1:05	52-42	40-30	28-18	not run	not run
		1:20	1:07	:55					

x 440 and 5 x 220, or 10 x 660, or 5 x 1100 yards.

Occasionally, the endurance workouts will consist of 4 x 1½ miles or 10 x 1100 yards. In this instance, the third phase would be deleted since the desired total milage would be attained.

Pace of the intervals is based on the runner's ability as measured by his best marks in the past track seasons, and is calculated from Gerschler's progression chart (see illustration). This is the nucleus of the *Controlled Interval System*, and the chart indicates the method of calculating the pace of a given interval during a given month of training.

The column headed "distance" refers to the interval, and "progression" indicates the number of seconds that the pace is increased each month (that the interval is run faster). For convenience, the progression for each month of an 8-month training season has been calculated, and the figures listed under each month indicate how many seconds are added to a man's best mark to determine the pace at which he should run the interval in question.

As an example, a runner with a best 440 mark of 50 seconds begins his 440 intervals in 73 seconds in August, increases his pace to 71 seconds by the end of August, during December runs them in 65-63, and by March is running 59-57 seconds.

Months marked "not run" indicates that these intervals are probably discarded at this time, since the fast pace of the short ones and the near maximum effort required in the long ones produce too great fatigue.

It follows that the runner must know his best marks at 220-275-330-440-550-660-1100 yards, and 1½ miles. Times for the odd distances if unknown should be calculated as follows:

275 yards—best 220 time plus 7 seconds.

550 yards—best 440 time plus 30% (i.e., 60-second 440 equals 78 sec. 550).

1100 yards—best ½ mile time, converted to yards/second plus additional 220 yards at same pace plus 7 seconds (i.e., 880 of 1:54.5 equals 7.6866 yards/second, so 1100 yards would be 143.5 sec. plus 7, or 2:30.5).

Each interval must be timed and reported accurately to the runner, and the pace must not be exceeded. It's the gradual increase of pace that insures improvement, but prevents the man from over-working through running too fast. The runner must have some-

one to time him, reporting the intermediate times en route on longer intervals, or else learn to carry a stopwatch and time himself.

The pace of a given interval should be even, whether it's a 220 sprint or a 1½ mile run. Though a man will learn to run a series of intervals remarkably close, timing must continue since it's easy for a man to become lost in fatigue and slow down or speed his pace as he fears he may be slowing down.

Rest Periods are times of recovery between intervals, and should be long enough to allow the man to recuperate 80-90%, but not so long that he enters the next interval completely refreshed. The runner should feel the edge of fatigue as he starts each interval, but the last interval should feel "almost as easy" as the first.

Thus, rest periods will vary with runners, but in general should be 2-4 minutes between 440's and shorter, 4-6 up to 660, 6-8 for the 1100 yards, and 10-15 between 1½ mile runs. With stronger runners, or as training progresses, rest periods may vary within the limits mentioned, depending upon the case. The rest period is spent in easy walking, with occasional light jogging to remain relaxed.

The following example of a daily work-out, witnessed and reported by the great American half-miler, Tom Courtney, while on tour in Europe in 1955, is quoted to give the reader an idea of the level of endurance which can be reached after 2-3 years of interval training.

The three Hungarians (Iharos, Tabori, Roszavolgyi), after a warm-up, ran 5 x 440 averaging 55 seconds, jogging 440 yards between each, followed by 5 x 440 in 55 seconds each, jogging 220 yards between each, followed by 5 x 440 yards in 55 seconds each, jogging 110 yards each!

Perhaps a few Americans could stay with these men for one of these grueling sessions, but the amazing point is that this was just one of their daily runs. It's the development of the stamina required to do this amount of work daily without ill effect that's necessary to reach the existing world records for the mile and longer distance runs.

YEAR-AROUND TRAINING

As mentioned before, long-distance running of top caliber requires year-around training, with two separate parts—an 8-month period of training only, and a 3-4 month period of com-



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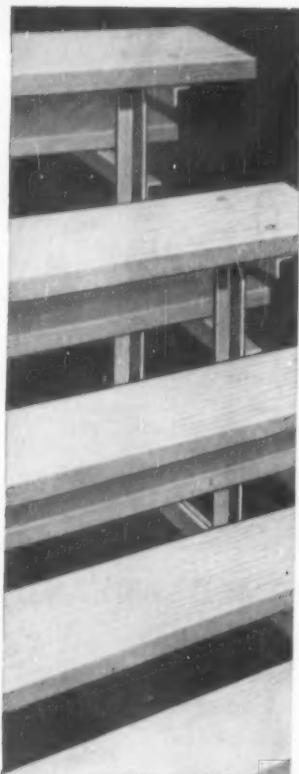
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petition (track season). Training begins at the end of the track season and carries through to the next, at the end of which the runner re-evaluates his best times and commences again at the beginning of another 8-months of interval training.

A schedule should be drawn up for 2-4 weeks in advance (preferably 4), giving the runner a plan to run by for this period of time. At the end of this, his condition and performances are evaluated and the ensuing 2-4 weeks planned and followed religiously. Depending upon the man's needs, ability, and past performance, a schedule of speed, fast pace, race rhythm or endurance intervals is tailor-made for him, and it's indeed a rare situation when two men would be using the same schedule.

It's the construction of the 2-4 week advance schedule that is critical, and it requires both subjective and objective thinking on the part of the coach or runner. The man's performance must be evaluated, along with his subjective feelings, then the program planned to meet his need for short or long intervals and for rest.

During the 8 months of interval training, the man runs 7 days a week, taking only 2-4 days of rest per month. As intervals become faster and workouts more fatiguing, additional days of rest may have to be inserted. These may be either complete rest or relative rest consisting of $\frac{1}{2}$ -1 hour sessions of easy jogging on a soft grassed surface.

A danger of such a rough program as this is "accumulative fatigue." Each day the runner tears down a certain amount of body tissue and depletes his muscles and liver of glycogen. These and other destructive processes are reversed and resources rebuilt in the interim between workouts. It's this process of daily extension and rebuilding of body reserves that develops stamina and endurance.

When the work-load each day slightly exceeds the ability of the body to recuperate before the next training session—and this is very likely with interval training—the body is forced into ever greater deficit. Fatigue accumulates. The runner does well for several days, then gradually loses his enthusiasm and bounce.

Properly scheduled rest days are necessary to prevent this accumulation of fatigue. It's possible that this is the answer to the problems of the "pulled muscle" and of men "going stale" as they attempt to force themselves into condition and compete under outmoded American coaching methods.

The illustration shows the 1-4th, 9-10th, and 15th weeks of interval training selected at random from one individual's schedule, intended as examples of stages of the training program. This man was an American runner of about 4:12 mile ability who was training for 5000 meters and who recorded a best time of 14:35.1 for the 1956 season—a personal improvement of over 1 minute following 8 months of interval training.

Any distance runner, from the $\frac{1}{2}$ to 6 miler, may use something similar as a basic program, and should use all intervals from 220 yards to $1\frac{1}{2}$ miles in his training schedule. The 880 man would of course do relatively more short intervals (of the 220-660 range), and the 6-miler more of the longer runs. The intervals complement each other, with the 1100 yard and $1\frac{1}{2}$ mile runs accustoming the man to steady output of effort, the middle intervals simulating racing conditions, and the short runs with their fast pace making the race pace seem comfortable—all developing stamina.

However, the half-miler will do fewer of a given interval at the maximum pace called for by the schedule (say 10 x 440 in 62 seconds), while

(Continued on page 74)

EXAMPLES OF STAGES OF TRAINING PROGRAM

Phase	Week	(Each Day's Workout Preceded by 3-Mile Warm-Up)						
		1	2	3	4	9	10	15
3	5x1100	10x400	10x1100	10x1100	10x330 5x550	10x550	5x1100	
3	3 miles	3 miles	None	None	3 miles	3 miles	3 miles	
2	10x550	10x330 5x550	10x660	10x660	10x660	5x660 1x1½ mi.	10x440 1x1½ mi.	
3	3 miles	3 miles	3 miles	3 miles	3 miles	3 miles	3 miles	
2	4x1½ mi. 10x275 5x440	10x275 5x440	4x1½ mi. 10x440	4x1½ mi. 2x1100	10x440 2x1100	10x440 2x1100	2x1100 10x330	
3	None	3 miles	None	None	3 miles	2 miles	2 miles	
2	2x1100 4x550 5x440	10x550 5x275	10x550 5x220	10x550	1 hour jog on grass	10x275	10x275 5x660	
3	2 miles	3 miles	3 miles	3 miles	3 miles	3 miles	3 miles	
2	4x1½ mi. 10x330 5x550			5x1100	2x1100 4x550 5x440	Rest	1 hour jog on grass	
3	None	3 miles	Rest	3 miles	2 miles			
2	10x550	10x440 5x275	10x220 5x100	10x1100	10x550	10x250 5x550	4x1½ mi.	
3	3 miles	2 miles	3 miles	None	3 miles	3 miles	None	
2	5x1100	5x550 5x440 5x330	10x330 5x275	4x1½ mi.	10x330	10x330 5x550	Rest	
3	3 miles	2 miles	3 miles	None	3 miles	3 miles		

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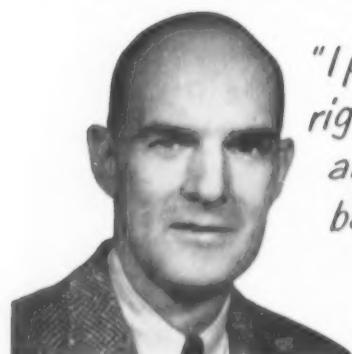
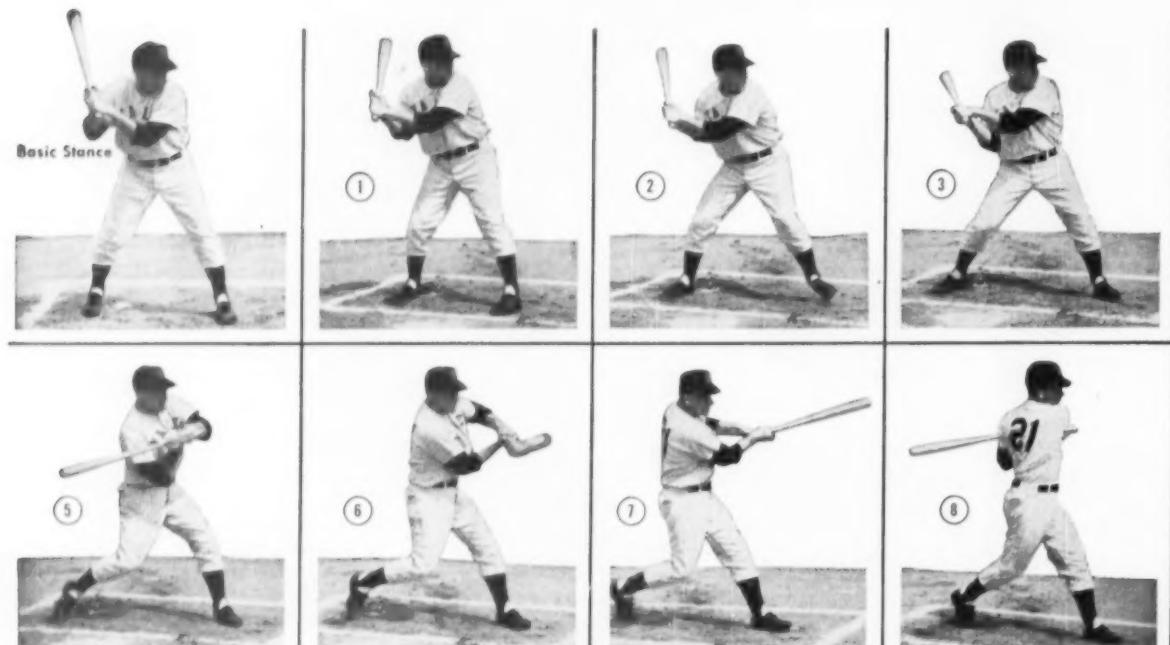
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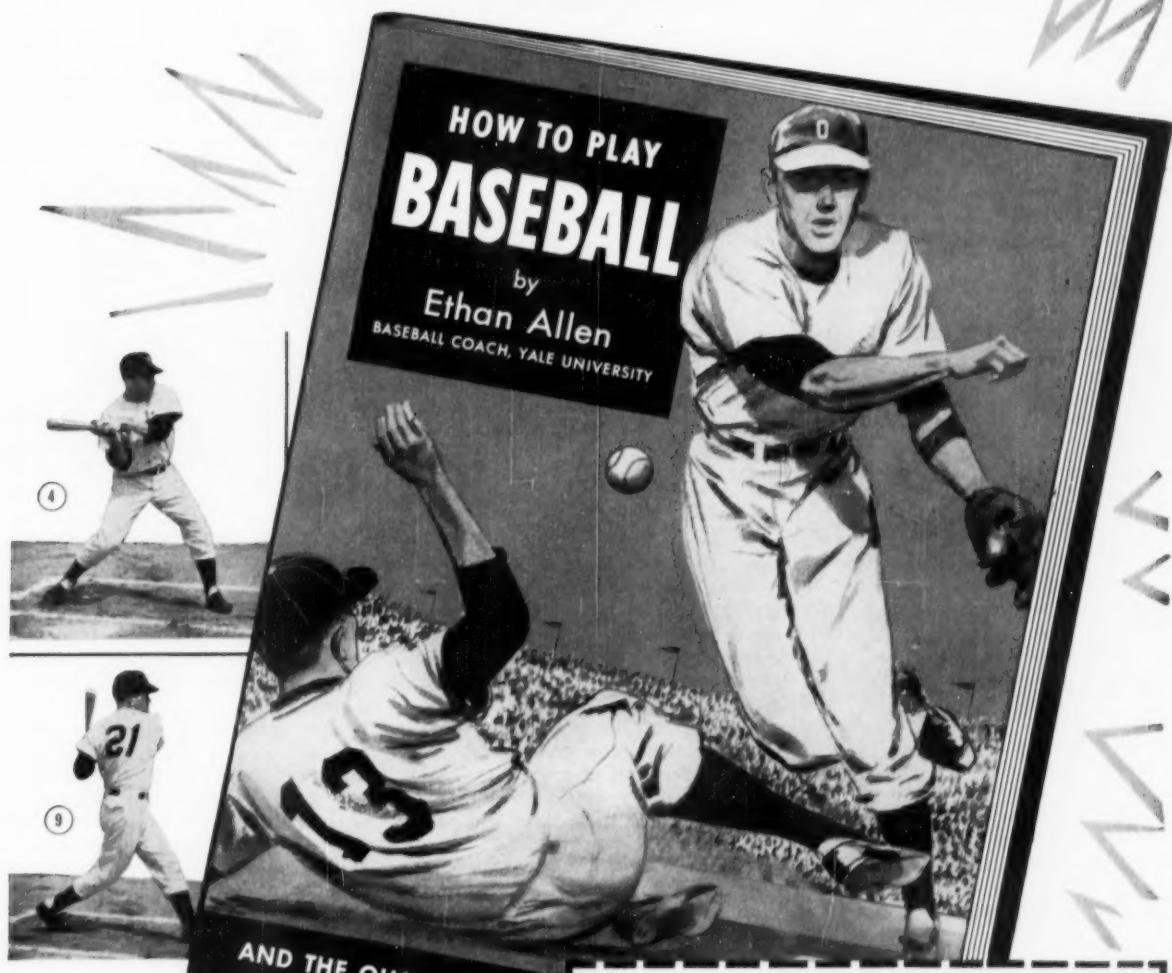
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AS A VARSITY SPORT

HIGH school golf appears to be on the upswing throughout the country. The publicity given the game, the general increase in interest since World War II, and the remarkable ability of our teen-agers have stimulated many schools into incorporating golf into their programs.

A rough estimate reveals that 2,500 or 14%, of our sports-playing high schools are now supporting varsity golf. Indiana is one of the leaders in the field. Approximately 125 of the 763 state association members play the game on an interscholastic level. This is an impressive statistic for a state which still has many small township schools.

The Indiana interscholastic golf program has been running for about 24 years, and has featured a state championship tourney every year (except for a break between 1941 and 1947). Golf has been introduced into the elementary schools as well, and Indianapolis now determines a grade school champion.

Several factors combine to make golf a logical high school sport. It's a fine, relaxed, highly stimulating game that requires little physical strength, enabling the little fellow to compete on equal terms with the big boy. The sport is also ideal for the social adjustment process, and has wonderful carry-over value as adult recreation.

Add to this the fact that golf is relatively inexpensive, and you can see how it can contribute to that well-rounded sports program that everyone seems to desire.

SETTING UP THE TEAM

The paragraphs that follow are offered as assistance to schools that are planning or just contemplating a varsity program. There are very few set rules or practices that can be recommended, since conditions vary from school to school. The aims, however, should be the same as for other school sports.

The program should be put under the aegis of your state athletic organization. There should be definite rules covering eligibility, amateur standing, competition, etc. Medical approval should be required of each team member, plus parental permission to play and travel with the team.

will seldom pose a problem, since you'll usually have just enough good players to make up a team. In some of the larger schools, however, a definite screening device will be essential.

In most cases, a series of playoffs, say 72 holes, can determine your best players. Sheer physical skill isn't the only thing to watch for in your golfers. Just as important is their ability to play competitively. In match play, it's necessary for one player to compete against another; and this involves pressure playing, tenacity, and the will to win.

Another item in setting up a golf team is equipment. How much shall the school provide? I know of no schools that furnish such items as clubs, bag, or shoes. But schools do sometimes provide shirts, golf balls, tees, green fees, and carts. The most common practices are to furnish balls for scheduled matches and to defray the green fees for practice and matches.

SCHEDULING AND COMPETITION

The athletic budget and the length of spring will determine the number of scheduled matches. In a season lasting approximately six weeks, a school can easily schedule about 14 matches.

The high schools of Indianapolis have adopted the custom of playing three or four matches simultaneously, with each school competing against the others. These are called three- or four-way matches, and make it possible to play a maximum number of matches in a minimum number of dates.

There's no fixed method of scoring a match. The most common system in central Indiana is called match-match-medal. This method can be used with any number of players on a team, and includes both match and medal play.

The players are numbered from one through six, and are paired off with the corresponding members of the opposing teams. Each pair competes against the other pair as follows: The first nine holes by match play, the second nine holes by match play, and the 18-hole score representing medal play.

Thus there are three possible points for each match or pairing. The two nine-hole matches count a

By ROBERT V. HIRSTEIN
Shortridge H. S., Indianapolis, Ind.

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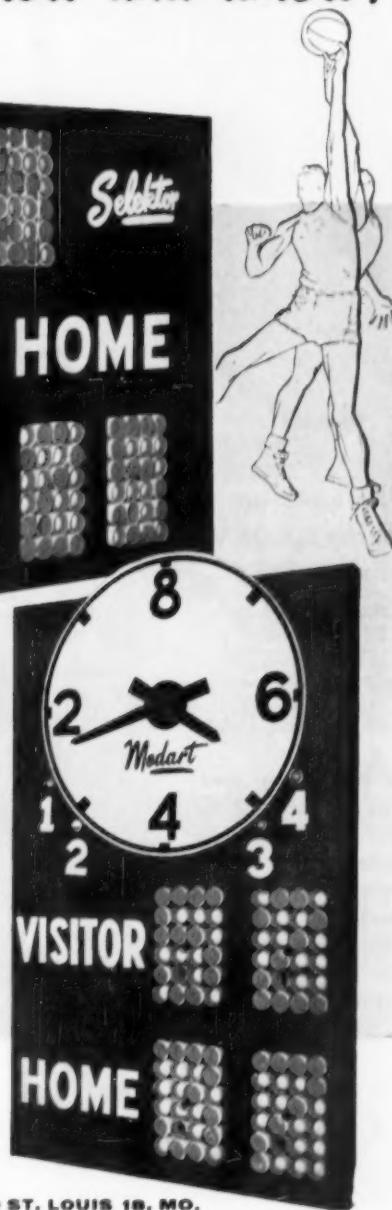
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point apiece, and the medal score provides the third point. In case of a tie in either the match or medal play, the particular point is split between the two players. With a six-man team, 18 points are at stake; and the final score will represent that or some variation thereof. This system of scoring is considered fair because it recognizes both methods of playing competitive golf. Both match play ability—that is, the ability to win holes—and low score (medal play) are rewarded.

In a second system of scoring, the scores of all the members of the team are added up and matched against the total score of the other teams. A variation of this is to count only the four low scores in determining the team score. This scoring system is frequently used in tournaments involving many schools.

At this point, a word about golf course arrangements may be in order. Most likely your community will have either a public or a private golf course. Several types of arrangements are possible. Many private courses will extend their facilities to schools for practice and matches or for matches only. Municipal courses, on the other hand, usually offer complete cooperation, since both the course and the school are servants of the community.

In Indianapolis, some of the high schools purchase season tickets for their players. This ticket allows the boy to play at any time on any city course. The acceptance of a season ticket doesn't violate his amateur standing.

Another manner of handling course arrangements is for the school to pay a flat fee to the city which will allow the team to practice or play whenever the team is accompanied by the coach or faculty sponsor.

It's the custom in Indianapolis to allow visiting out-of-town teams to play without charge, and Indianapolis schools enjoy the same hospitality in other communities. The flat fee system described above applies only to the spring season.

After initial arrangements have been made, there's a continuing need for close cooperation between school and course. Playing times must be mutually understood by both parties, the school must cooperate with the course officials, and the team must observe sportsman-like conduct at all times. On public courses, the school should avoid conflicting with industrial leagues and other groups.

In Indianapolis, a local newspaper awards an annual trophy to the school earning the most points in an eight-sport program. Shortridge

has won this award for the past two years because of a strong overall sports program which recognizes and encourages the minor sports such as golf and tennis.

There are two major invitational golf tourneys each spring at opposite ends of the state. Each tourney attracts the leading teams throughout the state, with each drawing approximately 20 schools.

State competition is divided into two tourneys. The sectional tournaments are held in four sections of the state, and are open to any school in good standing. Four or five schools from each section qualify for the state tourney in Indianapolis. There's a provision for individual medalists to go on to the state in case their school does not qualify.

The state tourney is held the last Saturday in May and usually includes 16 teams of four players each. It's played on a very exacting course, which usually takes a heavy toll among the players. From this tournament, a state team champion and a state individual champion (based on low medal play) emerge.

LETTERS AND AWARDS

Any discussion of awards must start with a word of caution. In golf, more than any other sport, a school must be careful not to violate the amateur standing of a youngster. High school golfers must be cautioned about accepting awards out of school, particularly during the summer when there are numerous invitational tourneys. Tournament awards are best limited to medals and trophies.

Requirements for earning a letter in golf vary greatly in Indianapolis high schools. Some require participation in a specific number of matches, while others require so many scores in the 80's or 70's during the season. The criteria for awarding letters will depend on the school and the calibre of golf played by the team.

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ATTRACTIVELY printed in two colors, the 1957 Master Lock "Sports Calendar" is 21" x 28" with protective metal strips on top and bottom and double eyelets for easy hanging. Space is provided under each date to facilitate the recording of future sports events and important meetings.

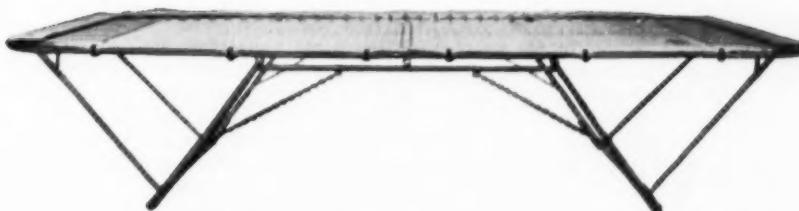
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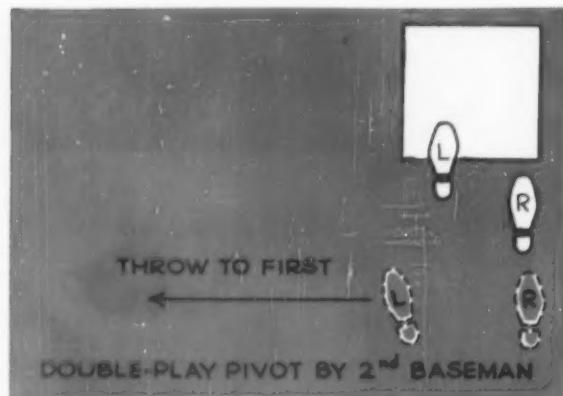
Many of you have told us of your interest in making Trampolining a competitive sport at your school and incorporating it as a regular part of your physical training program. Actually, in thousands of junior highs, high schools, and colleges Trampolining now is a full-fledged physical training and competitive activity. It is a regular event in NCAA and AAU championships, and is receiving growing international recognition. Furthermore, Trampolining is just plain fun and draws young people into

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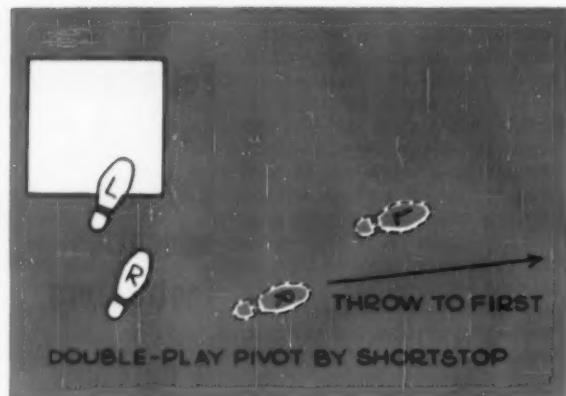
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Diag. 11, double-play pivot for the shortstop.

BASEBALL GYM DRILLS

By PETER T. DYER

Baseball Coach, Rye (N. Y.) High School

SINCE early-season gym drills can be a prime factor in the success of a baseball team, Rye H.S. institutes an extensive indoor program of instruction and drills on March 1.

Last month we described and diagrammed our warm-up, batting, bunting, and pitching drills. Now for the gym drills for catchers, infielders, and outfielders.

GYM DRILLS FOR CATCHERS

The catchers are also drilled on fielding bunts and making throws to bases. We teach them to stop the bunt by placing their big glove in front of the ball and to scoop the ball into the glove with the bare hand. For a throw to any base, the catcher moves to a point over the ball with his body slightly to the left of it. After fielding the ball, he shuffle-steps and throws.

We've found that it pays dividends to drill the catchers on low throws every day, whether indoors or out. Merely have a manager or another catcher go over to a corner of the gym and throw balls at the catcher's feet or slightly in front of him. This drill has helped many catchers conquer the toughest as-

pect of their job—the low pitch.

Their reaction time in dropping to one or both knees to block the ball is greatly improved, and both wild pitches and passed balls are reduced to a minimum. Of course, the catcher performs this drill in full catching equipment.

Right from the beginning of gym workouts, we try to simulate the steal of second for a few minutes every day. We have the catcher throw from the farthest corner-to-corner set-up of the gym, while the second basemen and shortstops get practice covering the bag and putting a tag on an incoming runner.

DRILLS FOR INFILDEERS

The smooth surface of the gym floor offers a fine opportunity to drill on the fundamentals of fielding the ground ball, without the hindrances that a bumpy high school infield can present. A great deal of confidence can also be built up by fielding "grounders" in the gym for three weeks prior to outdoor work.

We stress the point daily that the ground ball must be fielded well out in front of the body and not in close to the feet. This is a good habit for an infielder to get into, for, if

the ball is bobbled, he'll still have a play since the ball is in front of him. Where the ball is fielded in close to the feet and bobbled, it would roll behind the infielder and a "second reaction" play wouldn't be possible.

GLOVE-CONTROL DRILL

To obtain a well-reacting gloved hand in fielding ground balls, we have the infielder place his bare, or throwing, hand in his back pocket and field "grounders" with just the gloved hand. In this drill, the coach stands about 35 feet from the infielder with a full ballbag and rolls the balls across the gym floor to the player.

The infielder flip-throws each grounder with his gloved hand to a manager standing nearby. The manager, in turn, tosses each ball back to another manager or player standing by the coach. This procedure may be speeded up as time wears on and the infielder learns to place the gloved hand in front of the rolling ball rather than scoop or slap at it.

Another important teaching point in fielding ground balls is to stress the fact that the back side of the fielder's gloved hand should be scraping the gym floor. Have him bend that waist and those knees and get low to the floor.

The big reason for this emphasis is that it's easier to rise up for a bad hop when down low than it is to go down for a "skimmer" when maintaining a higher fielding posture. We also emphasize "looking the ball" into the pocket of the glove as it's being fielded.

From the glove-control drill, we go to the regular fielding of ground balls with both hands. The same



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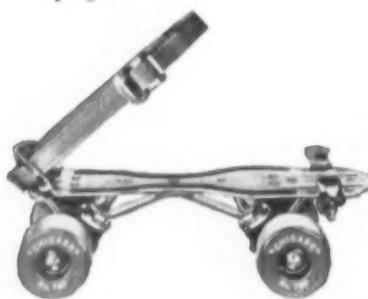
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fundamentals are stressed and we make the infielder move around a bit more. In moving left and right for grounders, the lads must be taught to use a cross-over step; this gives them the fastest start possible.

A lot of good work on charging ground balls and fielding hard smashes directly at you can be accomplished in the gym, and do much to foster confidence in the boys concerned. This confidence will carry right on over to the outdoor work, if properly established in the gym. On the "hard smash," the infielder drops the right knee to the ground to block the ball while fielding it.

Footwork on the shortstop-second baseman double play can be drilled to a high degree of satisfaction in the gym. There are, of course, several ways for the shortstop and second baseman to make the pivot. At Rye, one simple method is taught to both the shortstop and second baseman.

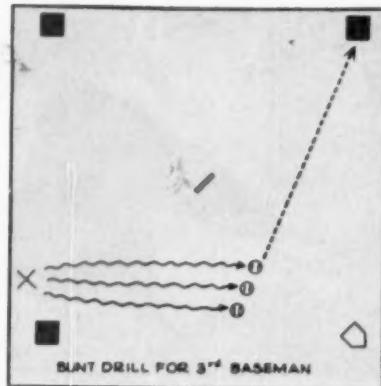
We have the second baseman take the ball while standing on the right-field side of the base. He pushes off second base with his left foot for the force play, and rocks back on his right foot to throw to first for the "double up" (Diag. 10).

We call this the "rock-back" method, and it has several advantages for the high school player. First, its simplicity prevents the infielder from getting his legs all tangled up and keeps him on balance to face a hard sliding runner. Secondly, it gives the second baseman a bit more time to react to a poor throw from the shortstop, since the second baseman is on the right field side of the base rather than crossing the base to the infield side, which would put him so much closer to the shortstop. It also gives the second baseman a well-balanced stance from which to throw to first.

The shortstop takes the throw chest high on the third base side of the base, steps on the base with his left foot, and then steps in toward the infield grass with his right foot for the throw to first (Diag. 11).

This method keeps the shortstop moving toward first base and his throw rather than away from his throw, which is the case when you teach him to go across the base in making the force play.

An excellent drill for your third baseman is to set up a modified infield in the gym and have him practice fielding bunts and throwing to first across his body. Start him with three balls lying stationary about halfway between the plate and third (Diag. 12). Have him run in from his normal position, slide his cupped hand under the ball nearest the



Diag. 12, third-baseman bunt drill.

mound, and throw across his body to first. We have him go under the ball with his bare hand to prevent any stabbing at the ball when fielding bunts and slow rollers.

He repeats this maneuver with the second and third balls. After this, the balls are bunted or slowly rolled to him as he repeats the process using the same technique. It's important to cup the bare hand, as mentioned above, and let the ball roll up into the hand on a bunt or slow roller, rather than stab at the ball with the palm of the hand down facing the ground.

OUTFIELD DRILLS

You probably wonder what can be done with outfield candidates in the gym. I believe a great deal can be accomplished, such as the footwork going left or right or back after a fly ball. It's also very beneficial to drill on fielding ground balls and on the judgment factor concerning line drives.

The coach can throw right at the outfielder, at his feet, or slightly over his head. This tests and develops the outfielder's reaction and judgment on the toughest play he must make—the line drive. Since the line drive gives the outfielder very little time to decide whether to take the ball on a short hop or try for a catch, a great deal of time should be devoted to this drill.

True, the lighting and other conditions are much different than they are outdoors, but this doesn't destroy the value of this drill, as you have the boys reacting, using judgment, and hustling. In addition, the outfielders get good practice in making the split-second decision on whether to make the play with the fingers of the gloved hand pointed skyward or with the fingers of the gloved hand pointing toward the ground.

(Concluded on page 52)

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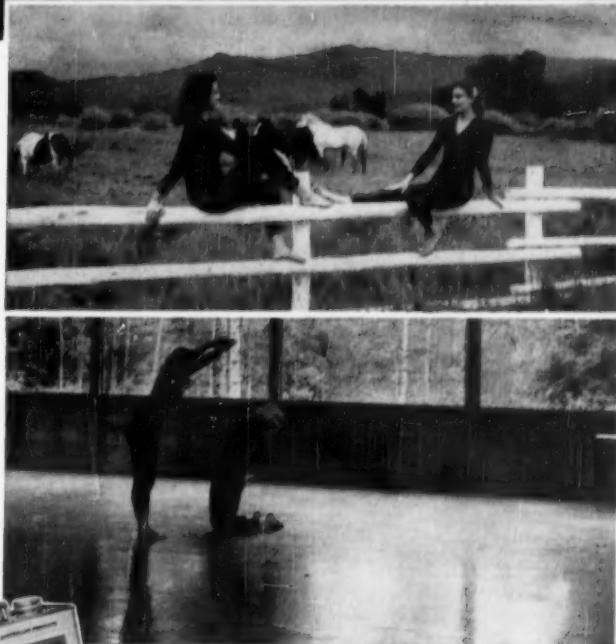


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By CHARLIE IRACE

Baseball Coach, Hunter College (N. Y.)

DEFENSIVE INFIELD STRATEGY

INFIELDERS function in two capacities: as cogs in closely coordinated two-, three-, or four-man units or as individuals pretty much on their own. Their base of operations depends upon the situation.

Their "normal" set-up is "deep." Exactly how far to play from the batter depends upon the fielder's range and arm, and the batter's hitting and running abilities. Infielders with strong arms and a wide range can play farther from the batter, enabling them to cut off many ground balls that would ordinarily go for hits.

Playing deeper affords them more time to judge the bounces and set for the throw, even when the ball is hit directly at them. The deep position also enables the player to catch pop-ups that would otherwise be out of their reach.

The infield is said to be playing "deep," or "back," whenever it sets up near the outfield edge of the skinned area. The only time it will deviate from its normal playing depth is when it becomes necessary to prevent a runner from scoring from third base. The infield then plays "shallow"—near the edge of the infield grass.

Situations of this type occur any time the crucial run is on third with nobody out, regardless of whether the other bases are occupied or not. When there's a runner on third or runners on second and third with one out, the infielders should also play "shallow." In the latter situation, the run represented by the man on third may be important but not crucial.

With one out and runners on first and third or loaded bases—with the runner on third representing the crucial run—the infield may assume "medium" depth, which is midway between "normal" and "shallow."

In this situation, the run may be

prevented without a play at the plate. A double play can do the trick. The "medium" deployment allows the infielders to go to the plate or try for two. It also gives them a little more time to reach ground balls, thus turning some potential hits into run-saving outs.

The "medium" position is used advantageously during the middle innings when it's desirable to prevent a run. But care must be taken not to leave the infield vulnerable to ground balls that might go past and thus set up a big inning.

In the later innings, the "medium" position is employed when the batter isn't especially fast, the runner on third is fleet, a double-play situation exists, and the infield is adept at making the double play.

Two constants exist regarding the playing depth of the infield: (1) the infield should play "shallow" with first and second bases unoccupied, the winning run on third, and less than two out; and (2) the infield should play "deep" with two out regardless of the situation.

Infielders serve as guides, assisting outfielders to make accurate throws to bases. The infielder desig-

SIMPLE STRETCH: Gil Hodges, perhaps the greatest fielding first baseman in the game, demonstrates the niceties of the basic footwork. As he reaches the sack, he quickly locates the ball. Then he puts his right foot on the inside of the bag and quickly comes around to face the man fielding the ball. Note the slightly flexed knees and raised hands. Since the ball is coming directly to the bag, he takes a fine full stretch with his left leg and catches the ball in both hands. Beginners should particularly note that Hodges doesn't straddle the bag when he comes up to it—in the classic tradition. He puts his foot right on the bag immediately, eliminating any frantic last-second groping for it.



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nated to line up a specific throw and the position he assumes depends upon the runners on base, the bases they're trying to advance to, and the area the ball has been hit to.

The infielder designated to line up the throw stations himself between the ball and the base the throw will go to. He stands about 50 to 75 feet from this base. The better the throwing ability of the outfielder, the farther from the base the infielder plays. The infielder stands erect and the ball is aimed at his head.

RELAY MEN

Usually the shortstop acts as the relay man on balls hit to the left of center field, and the second baseman assumes this role on balls hit to the right of center. When possible, it's desirable for the infielder with the best arm to act as the relay man regardless of where the ball has been hit.

In every case, the basemen is charged with the responsibility of deciding whether or not the throw should be cut off, since he's in the best position to watch both the throw and the runner. Usually he'll shout "cut" when he wants the cut-off man to intercept the throw, while silence on his part will indicate that he wants the throw to proceed to the base uninterrupted.

While waiting for the baseman's directive, the cut-off man observes the baserunners so that he'll know what base to re-direct the throw to in the event he's told to "cut."

Insofar as cut-offs at the plate are concerned, perhaps the easiest system is to use the third baseman as the cut-off man on singles to left field, with the first baseman handling the job in all other situations. The cut-off man should assume a position about even with the pitcher's mound so that he can intercept the throw. This is done only on the call of the catcher ("Cut!"). If no call is made, the cut-off man lets the ball go through to the catcher.

On pop flies, it's the pitcher's responsibility to designate which infielder should make the catch. Being in the midst of the infielders, he's in good position to make the decision. On pop flies hit toward the outfield, the call should be made by an outfielder.

It's preferable for the third or first baseman to catch any pop flies they can reach in the catcher's territory. Pop flies in the vicinity of the plate have a tendency to curve toward the outfield, and the first

and third baseman should thus experience less difficulty with them.

The pitcher's final responsibility is to cover any base left unprotected by the baseman's pursuit of the pop.

Once a runner is caught between bases, the primary move is to chase him back to his original base. One throw is all that it should normally take. Let's imagine the runner is hung up between second and third. The ball should be quickly pegged to the third baseman, who should fake a throw to second (with a good motion) in an attempt to get the runner to move toward third.

The third baseman should then chase the runner back toward second, bluffing a throw whenever necessary. With the aid of several bluffs, the third baseman should be able to make the tag himself. If he can't, he should throw to the baseman covering second.

Meanwhile, the other fielders should come in to help—depending on how many other runners are on base. With nobody else on, the pitcher can cover third while the third baseman is chasing the runner, and the shortstop can cover second.

INFIELD ORGANIZATION

Concise organization is definitely needed in sacrifice-bunt situations. Without it, catastrophe can result. Following are suggested ways and means of organizing the infield to handle the common bunt situations:

Runner on first: The pitcher and the first and third basemen move in to field the bunt, with the third baseman retreating to third if the bunt isn't to him. The shortstop covers second and the second baseman covers first. If the third baseman fields the bunt, the catcher covers third and the pitcher protects home.

Runners on first and second: The first baseman comes in to field any bunt to his side of the pitcher's rubber, and the pitcher attempts to field all balls bunted to his right. The catcher protects the plate, the shortstop moves over to second, and the second baseman covers first.

The third baseman has the tough play. He looks for the force at third. However, if the ball is bunted too far up the line for the pitcher to handle, he must come in and make the play himself—to first for the sure out or, occasionally, to second. The catcher should make the call.

Though inseparable from the total infield functioning, each position has tactics and strategy of its own.

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the first baseman should always try to be moving in the direction that he'll make his throw (if the play is to be made at second or third). To do this, he should approach the ball so that he takes it on his right side.

UNUSUAL PRECAUTION

When strategy dictates unusual precaution against an extra-base hit, the first baseman should play closer to the foul line. The extra-base hit must be zealously guarded against late in the game when one run is important, two are out, and no runners are on.

Keystone Combination. Although every double-play combination has its own idiosyncrasies, certain skills are basic to all. The first is that whoever fields the ball should throw it just hard enough to enable the other to coordinate its arrival with his tag of the base. Secondly, the throw should arrive *chest high* so that time isn't wasted bending for the catch or straightening out to throw. The chest-high toss also prevents the throw from hitting or almost hitting a sliding runner.

The infielders should be cautioned against fielding the ball and tossing it to their teammate with the gloved hand. For better accuracy and to assure a clear view of the ball at all times, the fielder should immediately remove the ball from his glove and toss it with his bare hand.

The third baseman, like the first baseman, protects a flank of the infield. In this capacity he can employ certain tactics to make himself more effective. Any time a bunt is expected, the third baseman plays nearer to the batter and closer to the foul line. Being closer to the foul line enables him to be moving in the direction he wants to throw (usually first or second base). Like the first baseman, he should play closer to the foul line when it's important to prevent an extra-base hit.

In instances when a runner is tagging up on a fly ball, the third baseman should call the umpire's attention to the base by pointing to it and saying "Watch his foot!" or something to that effect. This may make the runner cautious enough to remain on the base slightly longer than necessary, decreasing his chances of scoring after the catch.

The catcher must know the batter's weaknesses, the pitcher's most effective pitch and his control pitch, where each of these should be thrown to, and how to set up the batter for certain pitches. This is

complicated by the presence of baserunners and their intentions, which the catcher must try to anticipate.

Other ways in which the catcher aids the pitcher is by presenting a steady target. After giving his signal, he should assume his catching stance and hold it. Once the pitcher has gone into his throwing motion, any movement by the catcher may upset the pitcher's control.

The catcher plays a vital role in voiding attempted double steals with runners on first and third. Immediately after catching the pitch, the catcher should shoot a quick glance toward third as he prepares to throw. This not only permits him to see how far off third the runner is, but also makes the runner hesitate.

If the runner attempts to score from third after this hesitation, his chances for success are reduced. When executed properly, this maneuver shouldn't detract from the speed, strength, and accuracy of the catcher's throw to second base.

Bunts must also be approached by the catcher in a special manner. He should see that the ball lies between himself and the base he'll throw to. This eliminates the time it takes to turn around to look for the base and brace for the throw.

DUMMY PLAY

The catcher often can delude a runner into thinking the throw isn't coming home by standing relaxed with his arms down as if the throw were going elsewhere. At the last moment, he can catch the ball and put it on the runner, who may have slowed up or neglected to slide.

Whenever the bases are empty, the catcher should back up first on all ground balls. He shouldn't run alongside the base line, but should veer out about 30 or 40 feet from the line in position to handle an errant throw.

As a signal giver, he must realize that the opposing team has agents at work attempting to identify and interpret his coded messages. In addition to concealing or decoying his signs, he must constantly check to see if they're being stolen.

If so, he should switch to a different set of signals or employ a different pattern of signals. Besides the traditional finger signals, signs may be given by head or glove movements or with the use of an indicator. An indicator is any action that differentiates the real signals from the decoys.

The pitcher. When a runner is on base, the pitcher must minimize the



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150S SPECIAL GRAND SLAM—(Not illustrated). Quality and finish identical to No. 150 above, but turned to slightly smaller dimensions for the particular requirements of High School, Prep School, Babe Ruth League, Pony League, and other teen-age players. Six different models guaranteed to each carton of one dozen. Lengths 4/32", 5/33", and 3/34" bats in carton. Shipping weight, 25 pounds. Each \$3.45



140S SPECIAL POWER DRIVE. Natural White Finish. Turned from fine White Ash. Patterned after the original models of the Famous Sluggers whose names they bear, but turned to slightly smaller specifications for the particular requirements of High School, Prep School, Babe Ruth League, Pony League, and other teen-age players. Six different models guaranteed to each carton of one dozen. Assorted lengths 32" to 34", shipping weight, 25 pounds. Each \$2.90

Bats for PONY LEAGUE

Numbers 125S, 150S, 140S, and 130S (also the Junior and Little League numbers) are approved for PONY LEAGUE play. These numbers are particularly suitable for players of this age group.

Bats for BABE RUTH LEAGUE

Any baseball bat in the Louisville Slugger line not longer than 34" may be used in BABE RUTH LEAGUE play. However, the "specials" (125S, 150S, 140S, and 130S) are particularly suitable for players of this age group.

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LOUISVILLE SLUGGER BASEBALL BATS



14W SAFE HIT. Finished in Natural Ash White and supplied in an assortment of famous sluggers' models in each carton of one dozen. Assorted lengths from 32" to 35". Shipping weight, 26 pounds. **Each \$2.45**



11B BIG LEAGER. Black finish with white tape grip. An assortment of famous sluggers' models in each carton of one dozen. Lengths range from 32" to 35". Shipping weight, 26 pounds. **Each \$2.20**



130S SPECIAL SAFE HIT. Turned from Ash with rich Dark Maroon Finish. Patterned after the original models of the Famous Sluggers whose names they bear, but turned to slightly smaller specifications for the particular requirements of High School, Prep School, Babe Ruth League, Pony League, and other teen-age players. Six different models guaranteed to the carton of one dozen, assorted lengths 32" to 34". Shipping weight, 25 pounds. **Each \$2.10**



S LEADER. Light Brown Finish. Assorted famous sluggers' models. Assorted lengths, from 32" to 35". Shipping weight, 26 pounds. **Each \$1.70**

LITTLE LEAGUE AND JUNIOR BATS



125LL GENUINE AUTOGRAPHED LITTLE LEAGUE LOUISVILLE SLUGGERS. Large size Junior bat. Turned from select, open-air-seasoned White Ash and Hickory. Each carton of one dozen contains approximately half with Natural White Finish and half with Antique Finish. Autographs of **Duke Snider, Jackie Robinson, Mickey Mantle, Ted Kluszewski, Babe Ruth, and Ted Williams.** Packed 3/29", 4/30", 3/31", and 2/32" bats in each carton. Shipping weight, 23 pounds. **Each \$3.20**



125BB GENUINE AUTOGRAPHED LITTLE LEAGUE LOUISVILLE SLUGGER—EBONY FINISH. Large size Junior bat. Turned from select open-air-seasoned timber. Imprinted white tape grip. Autographs of **Duke Snider, Jackie Robinson, Mickey Mantle, Ted Kluszewski, Babe Ruth, and Ted Williams.** Lengths, 3/29", 4/30", 3/31", and 2/32" bats in each carton. Shipping weight, 23 pounds. **Each \$3.20**



125J GENUINE AUTOGRAPHED LITTLE LEAGUE LOUISVILLE SLUGGER. Medium size Junior bat. Turned from select open-air-seasoned Ash. Approximately half of the 125J bats have natural finish as shown above; the other half have an ebony finish. Autographs of **Duke Snider, Jackie Robinson, Mickey Mantle, Ted Kluszewski, Babe Ruth, and Ted Williams.** Lengths 3/29", 4/30", 3/31", and 2/32". Shipping weight 19 pounds. **Each \$2.45**



JL LITTLE LEAGUE "It's a Louisville." Large size Junior bat with attractive Ebony Finish and gold branding. Each bat contains the name of one of these famous hitters: **Duke Snider, Jackie Robinson, Mickey Mantle, Ted Kluszewski, Babe Ruth, and Ted Williams.** Lengths 3/29", 4/30", 3/31", and 2/32". Shipping weight, 23 pounds. **Each \$2.10**



J2 LITTLE LEAGUE. Large size Junior bat. Light Brown Finish. Each bat branded with name of one of these famous hitters: **Duke Snider, Jackie Robinson, Mickey Mantle, Ted Kluszewski, Babe Ruth, and Ted Williams.** Lengths 3/29", 4/30", 3/31", and 2/32". Shipping weight, 23 pounds. **Each \$1.70**



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WE MAKE THEM RIGHT... PERFORMANCE MAKES THEM FAMOUS



125Y OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 12. For the consistent hitter, a small-barreled bat with gradual taper to small grip. Antique Finish. Finest selection of Second-Growth Ash and/or Hickory. One dozen to carton, 6/33" and 6/34"; shipping weight, 19 pounds. Each \$3.45



125W OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT. Assortment of popular models packed in carton of one dozen. Turned from select Ash and/or Hickory, and Powerized. Finished in Natural Ash-White. Lengths, 6/33" and 6/34"; shipping weight, 23 pounds. Each \$3.10



125B OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT. A splendid assortment of models that will meet requirements of the various types of hitters. Red Maroon Finish. Turned from select Ash and/or Hickory, and Powerized. One dozen in carton, 6/33" and 6/34"; shipping weight, 22 pounds. Each \$3.10



125C OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 8. "Fast-Swing" Model for hitting fast pitching. Bottle-shaped large barrel that tapers quickly to small grip. Natural White Finish. Turned from select Ash and/or Hickory, and Powerized. One dozen to carton, 6/31" and 6/32"; shipping weight, 23 pounds. Each \$3.10



250B OFFICIAL LOUISVILLE SLUGGER "BLACK BETSY" ASSORTED SOFTBALL MODELS. A splendid variety of models—answers full team requirements. Ebony Finish. Turned from select Ash and/or Hickory. One dozen in carton, 6/33" and 6/34"; shipping weight, 22 pounds. Each \$3.10



125T OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 6. For heavy hitters—a bottle-shaped model with large barrel, tapering quickly to a medium grip. Natural White Finish. Turned from select Ash and Powerized. One dozen to carton, 6/33" and 6/34"; shipping weight, 24 pounds. Each \$3.10



250C OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 8. "Fast-Swing" Model for hitting fast pitching. Bottle-shaped—large barrel that quickly tapers to small handle. Ebony Finish. Turned from select Ash and/or Hickory and Powerized. Each carton, 6/31" and 6/32". Shipping weight, 23 pounds. Each \$3.10



125L OFFICIAL LOUISVILLE SLUGGER SOFTBALL MODEL 1. For girl hitters. A small-barreled bat with gradual taper to a small grip. Natural White Finish Ash and Powerized. One dozen in carton, 33" length. Shipping weight, 18 pounds. Each \$3.10



200A OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT. Supplied in assorted softball models. Finished in Brown Antique and Powerized. Turned from high-quality Ash and/or Hickory. One dozen to carton, 31" and 32" lengths; shipping weight, 18 pounds. Each \$2.70

LOUISVILLE SLUGGER

SOFTBALL BATS



102 OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT. Assorted popular softball models of first quality Ash and Hickory. Oil Tempered and finished in Saddle Brown. Packed one dozen to carton, 6/33" and 6/34"; shipping weight, 23 pounds. Each \$2.70



100C OFFICIAL LOUISVILLE SLUGGER "FAST-SWING" SOFTBALL MODEL. Turned from high quality Hickory and finished in Medium Brown. One dozen in carton, 6/31" and 6/32"; shipping weight, 23 pounds. Each \$2.70



100W OFFICIAL LOUISVILLE SLUGGER SOFTBALL BAT. Assorted popular softball models. Turned from high quality Ash and/or Hickory. Natural White Finish and Oil Tempered. One dozen in carton, 6/33" and 6/34"; shipping weight, 22 pounds. Each \$2.70



51 OFFICIAL "It's a Louisville" SOFTBALL BAT. Assorted models turned from Ash and Hickory. Brown Finish and Black Zapon grip. One dozen in carton, 6/33" and 6/34"; shipping weight, 21 pounds. Each \$2.10



54C OFFICIAL "It's a Louisville" SOFTBALL BAT—Bottle-shaped "Fast Swing" model. Made of Ash and Hickory, with Ebony Brown Finish. One dozen in carton, 6/31" and 6/32"; shipping weight, 22 pounds. Each \$2.10



54L OFFICIAL "It's a Louisville" GIRLS' MODEL. Natural White Finish Ash with Blue Zapon Grip. One dozen in carton, 33" length, shipping weight, 21 pounds. Each \$2.10



57M OFFICIAL SOFTBALL BAT. Turned from Hickory, and finished in Ebony. One dozen assorted models to carton, 6/33" and 6/34"; shipping weight, 21 pounds. Each \$1.70



52 OFFICIAL SOFTBALL BAT. Natural Finish Ash. One dozen assorted models in carton, 6/33" and 6/34"; shipping weight, 22 pounds. Each \$1.70



51H OFFICIAL SOFTBALL BAT. Turned from Hickory with Maroon Finish and Gray Zapon Grip. Assorted models. One dozen to carton, 6/33" and 6/34"; shipping weight, 23 pounds. Each \$1.50



58 OFFICIAL SOFTBALL BAT. Brown Finish. One dozen assorted models to carton, 6/33" and 6/34"; shipping weight, 21 pounds. Each \$1.20

In Softball as in Baseball... One Trademark stands Supreme

chances for advancement by preventing him from taking a long lead or making him linger longer than usual before starting his dash for the next base.

The pitcher should study the runner's mannerisms when taking a lead. A runner may reveal his intention to steal by taking an extra long lead or leading off too soon or in an unusually hasty manner. If the pitcher times the runner's movements correctly, a quick throw may catch the runner going the wrong way or catch him too far off the base to return safely.

OFF-BALANCE RUNNERS

Runners with poor balance or footwork are particularly prone to being picked off. In this regard, the pitcher should throw to first if and as he notices the runner taking a cross-over step in leading off, if he springs far off the base on his initial step, or if he leaves the ground with both feet.

If the situation indicates that the runner may be going with the pitch, the pitcher should try to pick him off. This will make the runner more cautious. The pitcher may further harass the runner by varying the time between the stop in his stretch position to the actual delivery, or by varying the speed of his wind-up.

By stepping off the rubber after preparing to pitch, he may create anxiety in the runner and set him up for a pick-off attempt.

The pitcher is indirectly responsible for the coverage of any base at a given time. He should start toward the first-base foul line any time a ball is hit to his left. If the first baseman must leave the base to field the ball, the pitcher should continue to the foul line and then proceed to the base by running parallel with the line in fair territory. If timed correctly, the pitcher should receive the first baseman's toss about one stride before he tags the base.

The pitcher may also have to cover the plate after a wild pitch or passed ball, and is sometimes called upon to cover second or third.

THIS is the first of two articles by Charlie Irace, former minor league ball-player now coaching at Hunter College. Next month, Charlie will detail defensive outfield strategy, including basic deployment, shifting, throwing, backing up, playing the fences, etc.

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Year-Round Intramurals

By JOHN W. BILLINGHAM

Physical Education, Woodland School, Jennings, Mo.

PHYSICAL education isn't an education in itself, but part of the total educational process. Where other phases of the educational program use books, tools, machines, or kitchen utensils, physical education relies primarily on activities to mold the individual physically, mentally, and socially.

Intramurals comprise one of the most effective means of accomplishing this objective. The writer subscribes to the sentiment voiced by the noted physical educator, Dr. Jay B. Nash: "The physical education curriculum, to be effective, must involve not only the teaching of activities during the school day but laboratory activities which cover a large portion of the child's free time."

Armed with this philosophy of physical education and intramurals, the writer entered his first teaching position as coach of all sports and physical education teacher in a small Illinois high school (184 total enrollment).

Here, the need for a program of intramural sports was evidenced by (1) considerable criticism by the students of the mistakes made by varsity athletes in interschool contests, and (2) gross waste of much of the students' leisure time.

Since the community provided no outlet in the way of a YMCA, city recreation program, organized community playground, or even a youth center, the author decided that an intramural program had to be the answer.

And time has proved him right! By turning many student spectators

into intramural players, the program worked a remarkable transformation in crowd deportment and developed a positive attitude toward competition. It also converted much of the students' wasted leisure into constructive leisure.

From all of this evolved the positive, constructive attitude so necessary for proper adjustment within our society today.

ORGANIZATION OF PROGRAM

The program had its beginning in a school assembly, where an intramural participation slip was distributed to all students. The slip asked all those interested to check the activities in which they'd like to participate. The activities offered were: (1) basketball, (2) ping pong, (3) volleyball, (4) free throws, (5) softball, (6) horseshoes, and (7) track and field. A place for the student's signature appeared at the bottom of the slip.

The only qualification was that before signing up the students should make sure that they had most afternoons (after school) and evenings free, as that was when the program would be conducted. No limitation was placed on the number of activities each student could enter.

The response to this inquiry was enough to indicate that a strong interest existed for such a program. Over half the student body signed up. Later in the year, a track and field entry slip was passed out to the students. On it appeared the events that would be included in the program.

For the boys, these were: 100-yard dash, 220-yard dash, 440-yard run, 880-yard run, mile run, high jump, broad jump, shot put, and 880-yard relay. For the girls, the events were:

50-yard dash, 440-yard run, softball throw for distance, broad jump, shot put, and 440-yard relay.

The students were instructed to check the events they wished to enter and sign the slip. A maximum of two running events and one field event, in addition to the relay, was allowed each student. This was necessary to facilitate the administration of the field day (which will be explained in greater detail later on).

The intramural program functioned under a specific set of regulations which were read and explained to the students and posted on the bulletin boards in both the boys' and girls' dressing rooms. These rules and regulations covered such things as: eligibility, forfeits, postponements, bulletin boards, signing up for activities, equipment, officials, point system, awards, care of injuries, and administration.

The rules were not complicated; they merely attempted to cover all conceivable developments in the conduct of the program. As it turned out, they did just that. An explanation of all of these rules isn't possible within the confines of this article. But most intramural books offer suggestions on each, which could be incorporated into any program.

Since three of the rules—point system, forfeits, awards—were unique to this program, an explanation of them would appear in order.

The point system used in the program awarded both the individual and the group to which he belonged. The student body was divided into two groups, with names corresponding to the two school colors.

This was done in the following manner: As soon as the intramural participation slips were handed in, they were arranged in alphabetical order and numbered. All even-numbered slips were placed in one group and

Basic Charts: At the right is the chart used to tabulate the points of the two color groups; and below is the chart used to tabulate each player's points.

ACTIVITY	NUMBER OF ENTRANTS	TOTAL PTS. FOR ENTERING	GAMES OFFICIATED AND POINTS	TOTAL OF COLUMNS 3 AND 4	NUMBER OF FORFEITS X 15	TOTAL IN COLUMN 5 minus NO. IN COL. 6	FIRST, SECOND & THIRD PLACE PTS.	TOTAL IN COLUMN 7 plus NO. IN COL. 8

	BASKETBALL	VOLLEYBALL	FREE-THROWS	PING PONG	SOFTBALL	HORSESHOES	TRACK & FIELD	
Enter	Forfeit	Officiate	Total	Enter	Forfeit	Officiate	Total	
Adams	0 0 0 0	10 0 0	0 10	0 0 0 0	10 0 0 0	0 0 0 0	10 0 0 0	1st 2nd 3rd 4th 5th 6th 7th 8th 9th
Long	10 0 10 10	38 10 0	148 70	0 -16 0 88	10 0 0 10	76 0 0 80	0 0 0 80	10 0 0 0 85 40 0 0 106

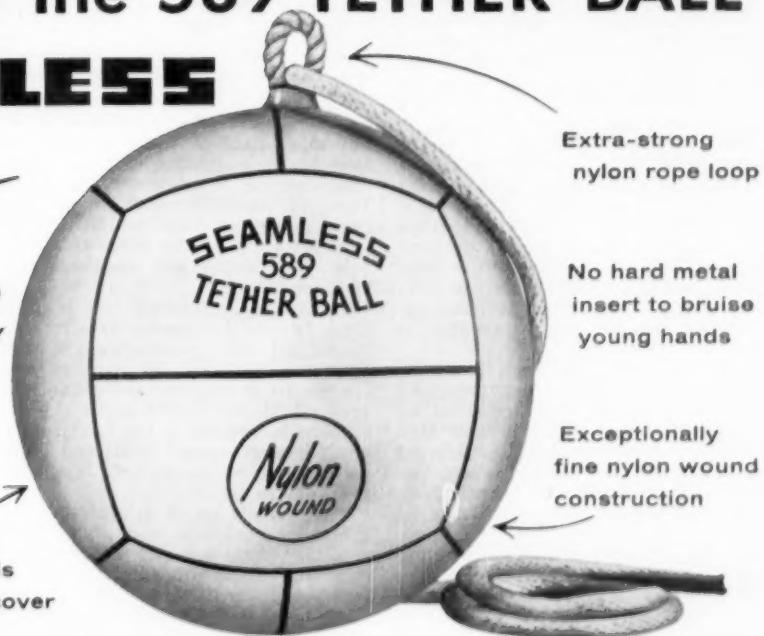


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all odd-numbered slips in the other. A list of the names of both these color groups was then posted on the bulletin boards.

All points won by every individual or team were counted toward their particular color group total, and the group with the highest number of points at the end of the school year was recognized as the color group champion. The individual thus became a member of a large group, whose success would depend to some extent on him. This concept is fundamental to the success of our democratic type of society.

In addition, while helping his group, each individual could help himself. All the points won by him also counted toward his own particular total, and the person with the highest individual point total received an award at the conclusion of the school year.

The points that could be won were: 10 points for each activity entered, 25 points for the first place winner of each activity, 15 points for the second place winner, 10 points for the third place winner, and 5 points to every official or helper for each contest officiated.

An individual could lose points if he either forfeited a match or caused his team to forfeit. All forfeits resulted in the subtraction of 15 points from both the student's group and individual totals. Thus, the individual not only hurt himself by forfeiting a contest, but hurt the color group to which he belonged.

This had two purposes: first, to help build a sense of loyalty and responsibility to a larger group; and second, to help each individual understand that once he begins something he should finish it. The writer believes that this is one of the most important objectives of this type of program.

The awards given in this program were small, plastic, silver and gold loving cups which could be inscribed in gold by the purchaser. The cost of the awards was 50¢ each. Since the total number needed was 48, the cost came to only \$24 for the entire program. This is very small, compared to the benefits derived from the program. Also, the cost per pupil amounted to less than 20¢ each.

When the awards arrived, they were appropriately inscribed by activity and placed on display. They remained on display until the annual Awards Day ceremony. This was a school day set aside to recognize scholastic achievement and service to the school. Each individual award winner was called forward, his record stated (if any), and the award made. The winning color group was announced at the conclusion of this ceremony.

CONDUCTING THE PROGRAM

Now for some of the techniques used to conduct the program. As soon as all of the original intramural participation slips were collected, they were arranged in alphabetical order on a Master Entry Chart. This was a simple chart with the students' names in alphabetical order on the left, the

activities of the program across the top, and a check opposite each student's name directly under the appropriate activity or activities he entered.

Prior to the beginning of each activity, a list of those entered was taken from the Master Entry Chart and posted. This had three purposes: first, the students were asked to examine the list to make sure there were no mistakes with respect to their name; second, this was the last opportunity to drop out if so desired; and finally, provision was made at the bottom of the list for any others who might want to enter.

A closing date for any additions or deletions, together with a beginning date for each tournament, were also given on each of these lists.

Competition in all activities except basketball and track and field was conducted through single elimination tournaments. For basketball, a double-elimination tournament was held; and for track and field, a field day was conducted in the spring. The final game of the basketball tournament was held during school hours, with the entire student body being dismissed to watch and cheer their favorite team.

CONTEST RECORD SLIP

Activity	
Contestants	
vs	
Winner	
Color Group	
Score	
To	

For all team activities, a definite date for each contest was established. For all individual activities, such as horseshoes, a closing date for each round of the tournament was given. Thus, no particular date was set for each match in these activities. The students played their matches whenever they could get together with their opponent.

Their only obligation was to play them before the closing date for the round. All matches not played by that date were forfeited. Points were subtracted from both the individual and group totals concerned, and the tournament proceeded to the next round. Of course, all tournaments and dates were posted on the bulletin board for everyone to see.

The officials (such as scorekeepers, timers, and helpers) were all students who signed up for each contest as it came up in the program. The actual refereeing for all team activities was done by the intramural director and a student, who signed up like the others mentioned above.

One qualification was made in this respect, and that was done only for basketball. In this activity, only varsity squad members could sign up to referee intramural contests. For the final basketball game, the director and his assistant coach served as referees.

Records were kept of all contests. The accompanying box illustrates the record slip for individual contests played on the students' own time.

These record slips were kept in a box set up in the gym. Before a match, the students could pick them up. At the conclusion of the contest, the winner filled out the slip and left it on a nail outside the coach's room or gave it to the intramural director if he was nearby. The latter then transferred the results onto the tournament brackets. Besides providing a written record for verification, this enabled everybody to keep track of the progress of the tournament.

In order to keep an accurate account of the points awarded to the individuals and groups, two charts were kept. The chart used to tabulate individual points is shown on page 42.

To determine how it works, let's trace the record of Adams. The boy failed to enter basketball and thus acquired no points for that activity. In volleyball, he received 10 points for entering. Evidently he wasn't on a team which either forfeited or won first, second, or third place in this activity, since there's no other entry under it. He thus has a cumulative total of 10 points.

In free throws, he failed to enter and therefore his cumulative total remains 10 points. In ping pong, he received 10 points for entering and did not forfeit or officiate any contests. He thus acquired a cumulative point total of 20 points up to this point.

In softball, he received 10 points for entering, did not forfeit any contests, was on the team winning first place (25 points), and wound up with a cumulative total of 55 points thus far.

As you see, the column labeled "officiate" was used to record both points received for officiating and points acquired by winning first, second, or third place in the activities.

In horseshoes, Adams earned 10 points for entering, did not forfeit, officiate, or place in this activity, and had a cumulative total of 65 points thus far. In track and field, he entered four events, did not forfeit, officiate, or place in these events, and finished with a cumulative total of 105 points for the year.

The chart used to tabulate the points of the two color groups appears on page 42. One of these was used for each of the two groups. This chart is self-explanatory.

THE FIELD DAY

The final event of the intramural program was the field day for all the track and field events. Held in the early part of May, it took approximately an hour and a half with the entire student body present to watch it (as in basketball).

Faculty members assisted in the officiating of the high jump, broad jump, shot put, softball throw, and starting and judging of the running

(Concluded on page 57)



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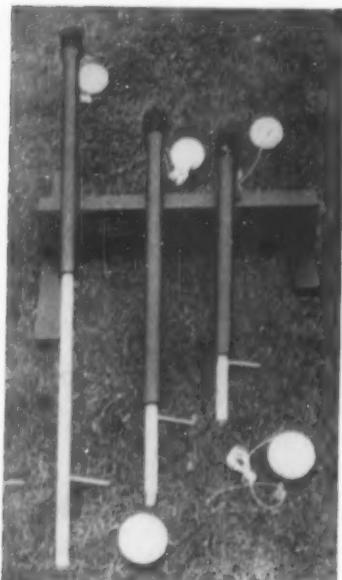
With spring practice so near, it's time to get in touch with your Spalding representative and stock up. He offers the J5-V along with a complete line of quality football equipment in every price range.

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NEW EQUIPMENT

For full details on any or all of these products, check the respective listings under "NEW EQUIPMENT" in the master coupon on page 80.



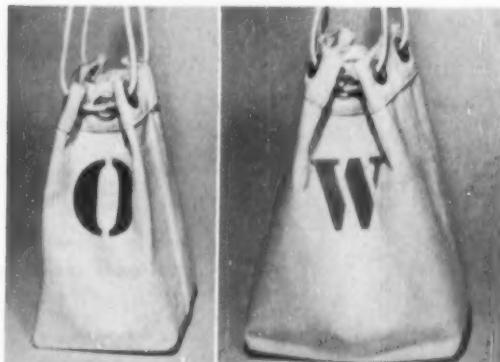
• PRACTICE TEE. The Bat-Tee Co.'s batting and tennis practice tee features collapsible rubber bellows ball support, polyethylene ball on strong elastic cord, steel spud and point for outdoor use, wood base for indoor use, and sliding frictional adjustment for various heights.



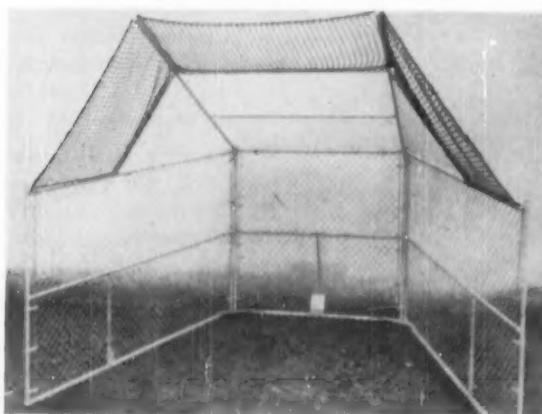
• ALUMINUM TEE and yardage marker for golf, discus, shot, etc., is made of weatherproof cast aluminum with stenciled numerals, with integral spike for quick placement or removal. (Ball & Hale)



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• TOTE BAGS. Snitz's discus and shot bags are "steals" at price (under \$21). Made of strong 18-oz. sail duck with rubber-padded inside bottom; teeth grommeted with rope carrying handle. Washable, easy to handle.



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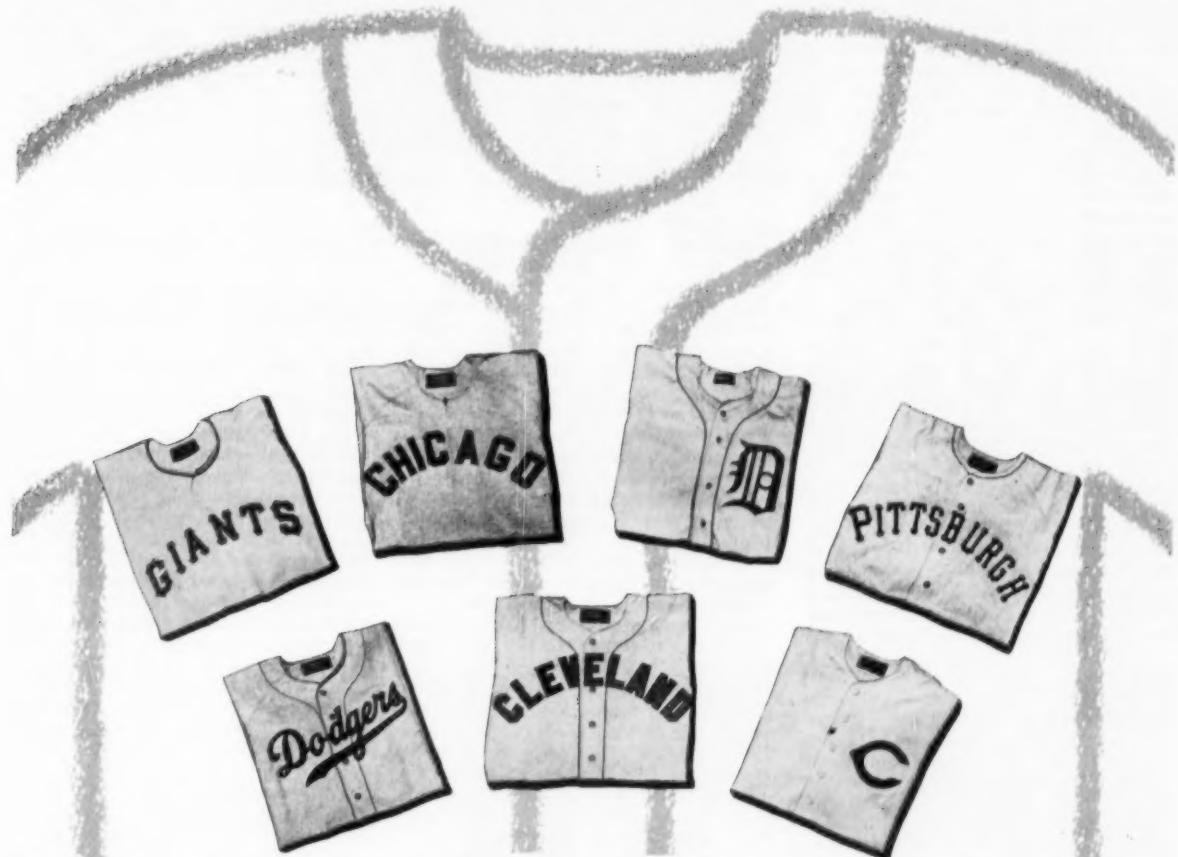
• PITCHING MACHINE. Dudley's automatic baseball pitcher is portable, collapsible, adjustable in height, and assures accuracy in strike zone. Feeder holds 30 balls, and pitches 7 balls per minute. Speed can be regulated. Operates by hand switch; can throw baseballs, softballs or tennis balls.



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Complete Guide to Good Hitting

(Continued from page 11)

ping the bat into the ball.

The hands should be held comfortably away from the body both before and during the swing—*before the swing* so that the batter will be ready for the pitch and be able to get into motion with no hitch or delay; and *during the swing* so that it won't be "choked" but will be free and fluid. If the hands are held too close to the body, the batter can be overpowered by a good fast ball.

Good hitters almost invariably have "quiet hands"; that is, regardless of their body movements, the hands are held as still as possible until the actual swing is begun so that there'll be little lost motion to delay the hitting actions and no counter movements to disrupt the fluidity of the swing.

Position in the batter's box varies according to both the characteristics of the batter and the ability of the pitcher. If the pitcher is particularly fast, the batter will probably get best results by standing as far back in the box as he can. If the pitcher specializes in slow and breaking stuff, a position forward of the plate will probably be most effective.

Generally speaking, most good hitters stand at the rear of the box on the assumption that the split-second gained thereby will enable them to control the bat and have greater success in meeting the ball solidly.

As indicated, no one set position is used by all good hitters alike. Individual style and preference being the determinant in this respect.

For general purposes, it's recommended that the batter stand back of the plate and far enough away from it so that the fat part of the bat comes directly over the middle of the plate. This will enable him to get "good wood" on an inside pitch simply by shifting slightly, while at the same time allowing him to protect the outside corner by stepping into the ball.

The reasoning behind this theory of guarding the plate is that the batter should always be able to hit the ball with the fat part of his bat—over any part of the plate—with a natural and completely unhampered swing.

His shoulders and hips should be level and his weight evenly distributed. The importance of good balance cannot be overestimated. It must be maintained throughout every phase of the swing, since a slight imbalance at any point will be greatly magnified in the full sequence of motion.

It's for this reason that a moderately wide stance is advocated. This makes for good balance, helps maintain the hips and shoulders on a level plane,

and promotes a smooth shifting of the body weight into the swing. Furthermore, a fairly wide stance is usually a comfortable one.

Weight: It's strongly recommended that a little more weight be placed on the front foot than on the back one. The primary reason for this is that it generally makes for good balance. Almost of equal importance is the fact that it also greatly reduces the tendency to pull away from the curve ball. And finally, placing slightly more weight on the front foot is a strong deterrent to lunging, overstriding, and uppercutting.

The feet should be firmly planted and flat on the ground, with the weight mostly on the front part of them, not in an exaggerated manner but comfortably and in a way which makes for quick and smooth striding and weight shifting into the ball. The importance of keeping the weight forward on the balls of the feet, toward the toes, cannot be overemphasized. It's essential to good hitting.

Adjustments: When a batter surveys the results achieved by his style, he may find it necessary to make slight adjustments. For example, if he finds himself getting around too far ahead of the ball, he can rectify the fault by closing his stance. If he isn't getting around on the ball in time, opening his stance might help him overcome this difficulty.

To summarize briefly: A comfortable stance should be employed in which the feet are moderately spread, the shoulders and hips level, and the weight evenly distributed. The grip should be moderately firm, the hands away from the body with wrists cocked for action. The weight should be slightly forward and centered on the front part of the feet.

THE EYES

Probably the very first instruction received by any youngster taking up a sport is "Keep your eye on the ball." This advice is especially pertinent to baseball in general and batting in particular. Establishing contact between the bat and a ball thrown with great velocity and occasional changes in course and speed is difficult at best, and unless the batter concentrates with great intensity on the ball his best efforts will go for naught.

The batter should visually pick-up the ball while it's in the pitcher's hand, even before his wind-up. A determined effort should then be made to keep the ball in sight continuously

throughout the wind-up as well as during its flight to the plate.

Since a smart pitcher will keep the ball well-hidden until its actual release, this will be exceedingly difficult for the batter. Nevertheless, he should make every effort to do so, and he definitely must pick-up the ball as soon as it comes into view.

Many fine hitters claim they can actually see the ball hit the bat. Whether this claim is true or not, it does emphasize the point that they're following the ball as closely as possible during its entire flight. Consequently, every batter should make it a practice to follow the ball intently all the way from the pitcher's hand to the plate, and should try to watch the ball hit the bat. The longer the batter looks at the ball before swinging, the less chance there is of his being fooled by the pitch.

The ball should be hit well out in front of the batter when it's in the strike zone. When this principle is followed, the ball, when met, won't always be directly over the plate. However, it should be contacted at a point in which its course of flight will carry it over the plate between the knees and the arm-pits. This is particularly true of a breaking ball which must pass over just a corner of the plate to be a strike and which might well have curved wide of the plate by the time it reaches the batter.

Every batter should know the strike zone and should always remember that the pitcher must get the ball into this zone before the batter has to swing at it.

To summarize briefly: The batter should spot the ball as soon as he can and should follow it closely all the way to the plate. He should hit the ball in the strike zone—in front of him—and should make the pitcher get the ball into the strike zone.

THE STRIDE

As in all other phases of hitting, the stride varies according to the physical characteristics and the personal preference of each batter. The stride determined through experimentation as giving the best results is the one to adopt. Important factors to be considered in arriving at the proper stride are the maintenance of good balance and a feeling of naturalness and comfort.

Some hitters take fairly long strides, others practically none, with good results in both cases. But very few, if any, really good hitters use an exag-



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gerated stride. Overstriding is one of the more common batting faults and should definitely be avoided. The batter who overstrides is not only easy prey for a smart pitcher, who'll have little trouble upsetting his timing, but won't even get good results when he does connect solidly since his power will have been dissipated in the stride rather than concentrated in the swing.

The ideal stride, conducive to good balance, is a short one—approximately six to twelve inches. Furthermore, the striding foot should move into position in sliding fashion, rather than in a pronounced step. Since a sliding step is practically impossible because the spikes will catch in the ground, what actually should be used is a "modified sliding step."

This type of stride will allow the batter to maintain balance throughout the entire swing and actually enable him to adjust his timing after the pitch is on the way to the plate. Furthermore, a short stride will insure less lost motion and will reduce the movement of the head and eyes.

The real purpose of the stride is the shifting of the weight into the swing. This should be accomplished in a way that won't interfere with a smooth, level swing.

As the step is taken with the striding foot, the weight should shift forward. The batter's hips, shoulders, and head should remain as nearly level as possible with the eyes concentrated directly on the ball. In this way, the desired smooth, level swing is more easily achieved.

HAND-ARM ACTION

The hands should retract slightly, moving away from the stride as it is started. This gets them into good position to move forward with the complete shifting of the weight.

The arms should be allowed to lag slightly behind the stride and the bat should meet the ball just a slight fraction of a second after the stride—not with it. The lagging of the arms permits adjustments in timing at the very last second and enables the batter to capitalize fully on his wrist snap for obtaining full power.

When the bat meets the ball just a slight bit after the stride, the full power generated by the weight shift will go into the swing and not be wasted on the stride alone. In other words, the full power of the entire hitting action should be brought to bear at the exact instant of impact.

The rear knee should be bent slightly for the most effective weight shift into the pitch and the swing itself should be against a firm front leg.

A pretty sound general rule for any batter to follow is to step toward the pitcher to hit. This will, in most cases, insure his stepping into the ball with his full weight behind the swing. Slight adjustments can be made when necessary for pitches either inside or outside, the principle to follow being—the closer the pitch, the

shorter the stride and the quicker the hitting actions.

To summarize briefly: The stride should be short, the head should remain stationary, and the arms should lag slightly behind the stride. The batter should step to hit and should adjust his stride according to the location of the ball; generally speaking, stepping toward the pitcher to hit.

HITTING ACTIONS

The front shoulder should remain facing the pitcher until just before the swing. This is closely tied in with the lagging of the hands behind the stride and is a great safeguard against pulling away from the pitch and against the loss of power resulting from getting out too far ahead of the ball.

Rotary hip action is absolutely essential to a good swing and actually starts the movement of the shoulders. This hip action is the key link in the chain which extends from the start to the finish of the swing. Rotation of the hips not only starts the movement of the shoulders and pulls the weight into the swing properly so that the ball is met with full power, but it leads the body through the continuous flow of motion into a good follow-through.

The proper hitting zone for the hands is behind the center of the body. The fact that the ball should be met in front of the plate might lead to some confusion here. To clarify the matter in his mind, the reader must take into account the fact that the stride and hip pivot precede the actual swing in such a way that, due to the partial completion of the body pivot, the ball can be met in front of the plate while the hands are still behind the center of the body.

The wrists should be held back in the hitting zone as long as possible. The combination of these two principles helps assure maximum power both by delaying the wrist snap until the moment of impact and by making the batter speed up the snap in order to get around on the ball while it's still in front of the plate.

The swing should come down and across the plate, leveling out as it meets the ball. The wrists are rolled as the ball is met well out in front of the plate, insuring good wrist snap and a proper follow-through.

Rolling the wrists is very important to a good swing. In order to achieve the correct wrist roll, the bat should be gripped in such a way that the second and third knuckles of the two hands are aligned, the hands coming together to form a flat surface. When this grip is employed, it will be practically impossible to swing the bat without rolling the wrists.

As previously stated, the wrist snap should take place at the exact moment of impact if maximum power is to be achieved.

To summarize briefly: The front shoulder remains facing the pitcher until just before the swing; a hip

pivot moves the shoulders; the wrists roll as the ball is met; and the batter should step to hit, the hands lagging slightly behind the stride.

THE SWING

As mentioned above, a fairly wide stance and a short stride control the batter's balance. The hands should be held in a high position—about letter-high—to get the best results. When the hands are held high, the batter will be able to adjust to any pitch, no matter at what height it crosses the plate.

As the hands move away from the body at the start of the stride, they're naturally raised. If held high in the first place, they'll have to be raised less at the start of the swing, thus eliminating waste motion and saving precious time in the split-second sequence of physical actions needed to meet a ball hurled at great speed.

The hands should be literally whipped into the swing. The batter should try to visualize himself swinging a rope the length of his bat, with a weight tied to the end of it. The motion necessary to swing the weighted rope effectively is similar to the one which will best whip the bat into the oncoming pitch. The fat part of the bat coincides with the weight at the end of the rope in this imagined situation.

The hips and shoulders, which were level during the original stance and the stride, should remain so during the swing. As the bat moves out across the plate, the front arm should be held firm and should be straightening out until it's perfectly straight at the point of impact. When the arms straighten out, the swing reaches its point of maximum power. The roll of the wrists occurs at this time and carries this chain of action through to its proper completion.

The batter shouldn't try to overpower the ball. Rather, he should concentrate on meeting it squarely. The lively ball will go for great distances when "hit on the nose." If the batter meets the ball solidly, extra base hits will take care of themselves.

The ideal swing is a level one; that is, parallel to the ground. The position of the hands at the start of the swing can be adjusted according to the height of the pitch, so that the sweep of the bat will be parallel to the ground whether the ball comes in high, low, or belt-high.

One method of achieving a level swing is for the batter to keep the rear elbow close to his body before and at the start of the swing. This means the right arm of a right-handed batter, the left arm of a left-hander.

Lunging at the ball is a common fault which should be avoided if a smooth sequence and a level swing are to be achieved. To prevent it, the batter should employ a slight inward turn of the body as the pitcher is about to release the ball. This is especially applicable to slow and



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breaking pitches on which the tendency to lunge is more acute.

To summarize briefly: The hands should be held high and whipped into the swing with the front arm kept firm and straight. The batter shouldn't try to overpower the ball but should merely try to meet it solidly.

THE FOLLOW-THROUGH

Like the basic principle of keeping the eye on the ball, the principle of following-through is instilled in all athletes from the very beginning. It applies to every form of athletic event. It's particularly applicable to batting, where failure to follow through properly can completely nullify the rest of the swing.

A good follow-through is absolutely essential to achieving maximum power. It also affords proof of whether most, if not all, of the basic

fundamentals have been observed.

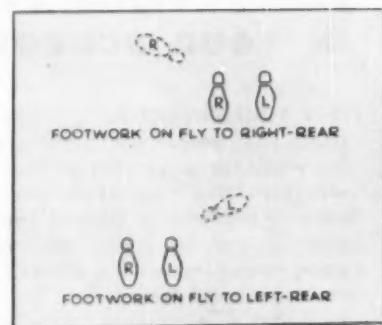
The **hip pivot** is completed so that the rear shoulder and hip come around to a point where they face the pitcher, with the body weight leaning in the direction of the hit—following the ball, as it were.

The bat should wind up in the middle of the back. When it does so, both from a vertical and horizontal standpoint, it means that the swing will have been fairly level with enough sweep to assure maximum power.

The fundamentals just discussed cover the basic essentials fairly comprehensively and are, needless to say, highly important to any player who would be a better hitter. They are, moreover, so closely related that they should be thought of as one continuous flow of motion. Each of these fundamentals takes place in a tiny fraction of a second, with each overlapping the other.

Baseball Drills in the Gym

(Continued from page 34)



Diag. 13, going back for a fly ball.

This is an important teaching point. Hesitation in properly placing the glove in correct fielding position has resulted in many a miscue in scholastic baseball.

The next thing we drill our outfielders on is the footwork involved in the pursuit of a fly ball, both to the sides and back. In going left or right for a fly ball in front of him, the outfielder should use a cross-over step, as this will get him off to the fastest start possible.

In going back for a fly, the most effective technique is to drop-step back with the foot closer to the ball and pursue the ball with the back to the plate (Diag. 13). This enables the outfielder to get started backward quickly and still keep his eye on the ball by glancing over his shoulder while running.

To drill on this footwork, the coach lobs fly balls to each candidate across the longest section of the gym. Though most gyms aren't much higher than 25 feet, the all-important footwork can be drilled upon and learned before the club ever gets outside.

Next, the outfielders drill on handling ground balls. Since our outfielders field grounders two different ways, we drill extensively on each. In playing it safe when a quick throw isn't necessary, we have our outfielders drop down on one knee directly in front of the ball so as to block it with the body if it gets past the glove.

In playing a ground ball on which a quick throw is imperative, we

have the outfielder charge the ball and get the throw off on the run. Once again the coach gets into the act by rolling grounders across the floor to each outfielder, calling out beforehand just how he wants the boy to field the grounder.

These gym drills, when put to good use, may not guarantee you an outstanding season, but they will put your squad in good baseball shape early, enabling you to have the best possible start with the material you have on hand.

Many schools go into their first game in a poor state of readiness. This is usually attributed to the lack of suitable weather. Now it's true that the early spring weather can be mighty sloppy for days at a time, but that's just the time to have the entire ball club report to the gym for afternoon workouts. Rye H.S. starts its varsity and jayvee program on March 1 in the gym.

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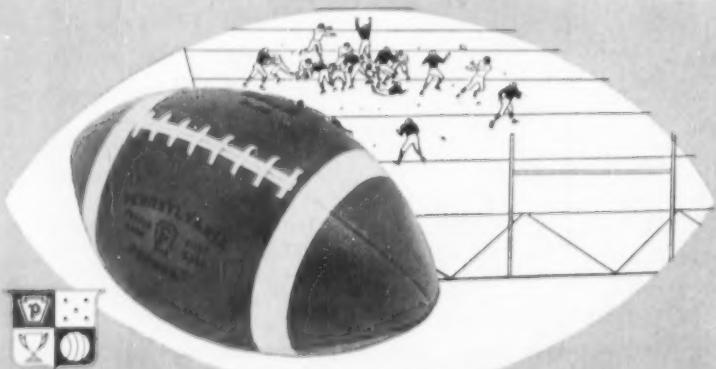
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Cross-Over Pass

(Continued from page 7)

If any part of the curve baton pass could be singled out as the most difficult, it would undoubtedly be that of getting the outgoing man underway fast.

Members of the quarter-mile relay team usually double up as sprinters or hurdlers and, as such, have spent hours perfecting a crouch start on a straightaway. This works against efficiency in the curve pass in the relay. Whether or not the crouch start is used, the boy must not only start hard, but also lean inward in order to stay in his lane on the curve.

Invariably, as the boy turns from his visual check of the "go" mark and digs hard, his first two or three steps are wide and off the arc he wishes to run in his lane. As a result, he steps wide in his lane and has to fight his way back to the other side, or he steps clear out of his lane and fouls. In any case, he loses valuable time generating top speed.

The cross-over pass furnishes an excellent answer to the problem. It utilizes a left-hand to right-hand exchange of the baton. The incoming runner approaches the passing zone in his normal position next to the inner edge of his lane, and moves outward only at the last moment before the exchange.

The outgoing runner places himself in the right-hand rear corner of his zone, watching over his left shoulder as the incoming runner approaches the "go" mark. (In the normal left-to-right pass, he would be in the left-hand corner, watching over his right shoulder.) This act of turning inward on the curve eliminates about 50% of the body twist necessary to turn outward on the curve.

As the approaching runner hits the "go" mark, the outgoing man turns and drives hard, moving gradually from the outside of his lane toward the inner edge. He's actually able to move straight ahead for some five to eight yards before it becomes necessary to begin leaning into the turn and running an arc.

The fact that the runner may still step wide as he turns to start isn't nearly as time-consuming now, for such a step actually puts the man closer to the position desired in the lane for the exchange. After driving hard four to six steps, he drops his right hand back for the stick.

To help the runners visually divide the area so that both men may

run side-by-side comfortably in the single lane at the moment of exchange, we have the outgoing man mark the lane before the race actually starts. Beginning at a point about three yards inside his zone, he drags a line down the middle of his lane with his spikes for a distance of about 12 to 15 yards.

The runners can easily pick up this line out of the corner of their eyes as the gap between them closes. This procedure is especially useful with big men who have difficulty even when running alone in the lane.

High Hurdling

(Continued from page 8)

bar. This means that the back leg must trail after leaving the ground until the front foot is in such a position. The legs then move together and scissor against each other.

The downward drive of the front leg is an important factor in bringing the back leg through fast and in maintaining maximum leg speed over the hurdle. But only if the above described movements are executed simultaneously.

A common fault is that of rushing the back leg so that it starts its action before the front leg is in position to start. In extreme cases, the hurdler is jumping instead of running over the hurdle. If he did the same thing in running, he would gallop.

If the parallel drawn between the running stride and the stride over the hurdle is extended further, then the front leg should be bent at the knee in reaching for the hurdle—just as it is at the same point in a running stride.

On the other hand, Calhoun, Davis, and Dillard, to name a few, all reach for the hurdle with a straight front leg. (See picture No. 6.) This is one of those deviations from theory that makes track coaching so interesting.

2. In applying this principle to the hurdle stride, attention is directed primarily to the arm opposite the front leg (long arm), since it's the one whose action must be adjusted most to the long stride over the hurdle. The long reach of this arm corresponds to the trailing action of the back leg. The backward sweep of this arm and the forward motion of the back leg should start and proceed simultaneously.

The function of this arm is to balance and aid the back leg. This is done most effectively when it is swept back fully extended so as to just clear the knee of the back leg.

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Having observed the careers of many members of the Rifle Club since graduated from High School, I have noted that many have become leaders in their fields, and I feel that the lessons learned from their hours spent in rifle marksmanship have stood them in good stead. I wholeheartedly believe in the benefits to be gained from this sport.

Sincerely yours,
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ment, marksmanship, target shooting, the construction of rifle ranges, and many other subjects of practical value. Just fill in the coupon and mail it to Rifle Promotion Section, Remington Arms Company, Inc., Bridgeport 2, Connecticut.



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This brings the arm's and leg's center of gravity most nearly in the same horizontal plane where their mutual balancing functions best.

Once past the knee, the arm is bent at the elbow and brought in to its normal running position. If allowed to continue fully extended too far, it would turn the upper body to the side.

Since the front leg merely has an exaggerated straight-ahead running action, the arm on that side has a corresponding exaggerated running action. That is, in the orthodox style used by most hurdlers. It remains bent at the elbow and stays in the same vertical plane as the leg.

Some hurdlers use the double, or both-arms-forward, arm action. One version of this style is illustrated by Calhoun. This is another departure from the running stride theory of hurdle clearance. Some hurdlers find it helpful in achieving a good body lean.

From the standpoint of body mechanics, it should be swept back in conjunction with the other arm. The weight of this arm sweeping back will assist in pulling the body across the hurdle and onto the ground. When this function is completed, it must make a very quick recovery to get back to a running position.

Dillard also uses this style. Davis, on the other hand, uses the orthodox running action described previously.

3. Following this principle requires an extreme body lean in clearing the hurdle and maintaining this lean in coming off the hurdle. In this connection, it might be noted that it's much easier to achieve a good, relaxed body lean by keeping the front leg bent rather than straight at the knee.

Another application of this principle can be made to the action of the back leg. If this leg's center of gravity is to have minimum deviation from its own running path, then the whole leg should be in a horizontal plane as it clears the hurdle. The knee should then be kept low as it goes into the first stride beyond the hurdle.

Another interesting conflict between theory and practice may be noted in studying the styles of Calhoun, Davis, and Dillard. They carry the knee quite high into this first stride.

Nothing I have said should be construed as finding fault with the style used by any of the hurdlers mentioned. Some variations from a theory which cannot be proved have been pointed out. My own conclusion as to the best coaching theory to follow with a 13.5 hurdler is—don't meddle with him!

Defensive Tennis

(Continued from page 18)

back of the service line. Make practice on lobs part of your daily workout.

Only average-to-poor players apologize for lobbing. The good players take pride in it. Let me remind you that lobs can be offensive as well as defensive. So don't regard lobs as "dink" shots to be despised, but valuable offensive and defensive strokes to be employed as a regular part of your balanced game.

Tennis is a great game. It possesses the full range of strokes from the delicate finesse of a drop shot to the solid power of the cannonball serve. There's a constant play of emotions and a complexity of psychology during every moment of a competitive match. The hard-earned skill of fine stroking must be supplemented with the intelligent application of strategy.

This, then, is a game for a cool head and disciplined emotions, of searching intelligence and the intense desire to win. The strategy by which a match must be won may be as variable as the elements of which we've just spoken.

Intramural Program

(Continued from page 44)

events, while a public address unit owned by the school's Future Farmers of America organization was used to call out the events and announce their results.

Each event was handled exactly as in a track meet between schools. Records of all events—times and distances—were kept and posted on the bulletin boards.

This program was a great success, thanks to the help and cooperation of many people. The school administrator's policy of dismissing students to observe the program was certainly out of the ordinary. The help of the many members of the faculty in officiating was indispensable. And, finally, the cooperation of the girls' physical education teacher in organizing the girls' teams, conducting the tournaments, and keeping the records of their activities was of utmost importance to the success of their phase of the program.

It's hoped that the description of this program will help others in organizing and conducting similar programs. This type of program can certainly help effectuate the aim of physical education—the optimum physical, mental, and social development of the individual through total body activity on the recreational level under democratic conditions.



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It's made of 14.73 oz. White SAIL CLOTH DUCK with double bottom and teeth grommeted band in school colors or plain.

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SNIZ MANUFACTURING CO.



1956
STATE
HIGH SCHOOL
FOOTBALL
CHAMPIONS

SEE PAGES 60-61 FOR COMPLETE 48-STATE CHART ➤

If you don't believe that fate moves in many strange ways, look at what's happened to the pigskin pastime. Over the past 50 years, in an effort to encourage forward passing, the shape of the pigskin has been changed from round to snub-nosed to pointed. And now the game is going back to the ground!

According to a survey of 70 of the nation's top high school teams, the tremendous swing to the Split T has made the pass distinctly secondary in importance. The nation's top elevens in 1956 relied on the pass for only 20% of their total yardage!

On pages 60-61, you'll find all the dope on these teams. Of the 65 schools replying to our questionnaire, 54 submitted complete team and individual records. These 54 schools reported an average passing yardage of about 64 per game, as opposed to a total offensive yardage of 328.

In making up our selections, we chose those schools which won state-association approval as state champions, those which received newspaper or press association awards, and—in states with no clear-cut champions—those with outstanding records. The 70 schools listed showed a composite record of 640 wins, 22 losses, and 20 ties.

Questions asked were: (1) season record, (2) basic and supplementary offenses, (3) points scored, (4) points scored against, (5) net yards gained rushing, (6) net yards gained passing, (7) number of punts, (8) fumbles lost, (9) opponents' fumbles recovered, (10) number of players used as regulars on both offense and defense, and (11) average weights of offensive line and backfield.

Of the 65 schools that reported their type of offense, 28, or nearly half, were split T advocates. 19 employed a straight or "tight" T, and 6 used the winged T. 3 schools, a tremendous drop from past years, were single wingers, while 4 leaned toward the multiple T. 1 each reported the double wing, spin T, spread T, and unbalanced line T.

It's interesting to note that among the 10 schools reporting average passing gains of over 100 yards per game, only 2 were split T advocates.

Supplementary offenses reported covered a multitude of things, as the chart will show. 19 of the schools stuck with one form of offense. Others used four or five additional systems.

In compiling points for and against, the offensive figures carry far more weight than the defensive ones. Many schools gave up several touchdowns after the game was well in hand.

The most astounding offensive figure was that of famous Canton McKinley. This Ohio team tallied 490 points in 10 games, a new school record, and yielded only 16 against rugged opposition.

Abilene, three-year Texas champ, scored 491 markers in 14 games for an average of better than 35 per

(Continued on page 62)

Du Pont Motion Picture Film

**captures every movement
for easy study!**

Only split seconds between a hurdler's take-off, stride-over and landing . . . but seconds that spell the difference between a winner and an "also-ran." Du Pont Motion Picture Film helps your hurdlers—as well as your other trackmen—perfect their form and timing by seeing how they look in action.

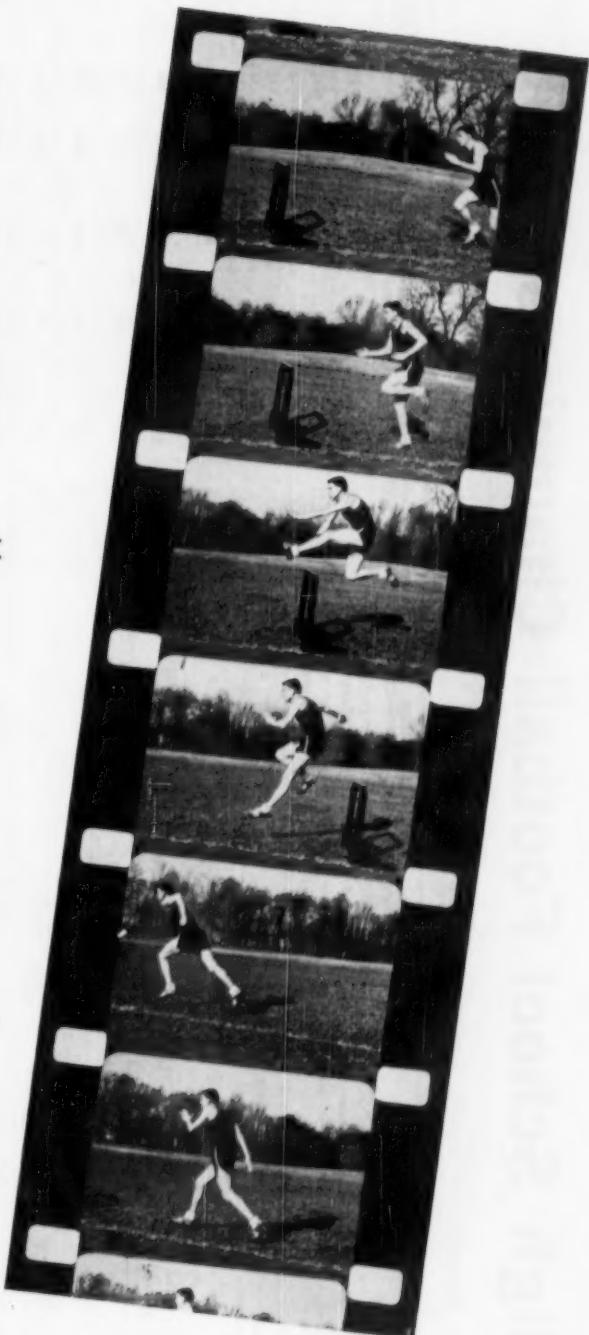
Even on dark, overcast days you can get good, clean pictures with Du Pont Type 930 Rapid Reversal Motion Picture Film. And, for your indoor events, with only existing lights to work by, Du Pont High Speed Type 931 will give you clean-cut pictures of "live-action" quality. For future training, you'll find easily stored film of track events is almost like having an assistant coach.

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State High School Football Champions, 1956

*Official state champion

=Official state co-champion

SCHOOL		COACH	RECORD	BASIC OFFENSE	SUPPL. OFFENSE	POINTS SCORED AGAINST PER GAME	YARDS RUSHING PER GAME	YARDS PASSING PER GAME	TOTAL OFFENSE	WEIGHT LINE BACKS (Offensive Team)	WEIGHT TWO-WAY PLAYERS (Offensive Team)
ALABAMA	Woodlawn (Birmingham)	Kenneth Morgan	10-0-0	Split T	Variations	219	26	280	33	313	182
ARIZONA	Mesa	Edgar Ford	9-1-0	Winged T	TCU Spread	237	121	228	83	311	175
ARKANSAS	*Little Rock	Wilson Matthews	12-0-0	T	Slot T	417	56	273	101	374	173
CALIFORNIA	Alameda Anaheim Downey Van Nuys	Chuck Butler Cleve Van Maarsen Dick Hill	9-0-0 12-0-1 8-0-0	Spread T T T	437 114 441 125 250	277 189 349 50	140 58 50	329 329 419	182 179 176	170 153 149	5 7 9
COLORADO	*Colorado Springs	Gib Funk	11-1-0	Split T	Belly Series	264	85	243	49	291	179
CONNECTICUT	New Britain	John L. Toner	8-1-0	Winged T	T	236	56	247	100	347	175
DELAWARE	Newark	Don Miller	8-0-0	Winged T		217	98	228	23	251	184
D. C.	*St. John's	Joe Gallagher	5-3-2							174	171
FLORIDA	Carol Gables	Nick Kotsas	9-0-0	Split T	Belly Series	256	56	337	65	402	185
GEORGIA	*Richmond (Augusta) *Valdosta	Frank E. Inman Wright Bateman	9-2-1 13-0-0	T T	Spread	154	65	167	15	182	183
HAWAII	*Roosevelt (Honolulu)	Ed Vasconcellos	12-0-0	Split T	T	338	85	250	100	350	188
IDAHO	Pocatello	Wally Kelly	10-0-0	Split T	Flamers	316	57			192	160
ILLINOIS	Lev (Chicago) Evanston Twp.	James Arnsberg Karl A. Pith	10-1-0 6-0-2	T Split T		284	101	290	43	313	197
INDIANA	Reitz (Evansville) Richmond	Hermon Byers Hubert Etchison	9-0-1 9-0-0	Multiple (Unb. Line) Split T Belly	Split T (Unb. Line)	349	25	251	62	313	185
IOWA	Ames	Kenneth Wells	8-0-0	Split T	Tight T	316	58	323	109	432	192
KANSAS	Lawrence	Alan Woolard	9-0-0	Split T		218	58	198	60	258	185
KENTUCKY	St. Xavier (Louisville)	John Meiners	10-0-1	Split T	Tight T	316	44	329	34	363	166
LOUISIANA	*Istroumou (Baton Rouge)	Fuzzy Brown	10-2-0	Winged T		284	50	264	53	317	189
MAINE	*Edward Little (Auburn)	Stephen Grenda	7-1-0		Belly Series	139	78	201	33	224	185
MARYLAND	Bethesda—Chevy Chase	Al Sodsky	8-0-0	Single Wing	T (Unb. Line)	167	21	Net Available		178	158
MASSACHUSETTS	*Weymouth West Springfield	Jack Fisher Edward Marion	9-0-0 7-0-0	Split T Split T	Belly and Drive Miami Drive	279	53	298	33	331	178
MICHIGAN	Flint Northern Delta State (Detroit)	Andy McDonald Thomas Bonine	9-0-0 8-1-0	Split T Split T	Split T T, ND Box	263	67	299	48	347	178
MINNESOTA	Roosevelt (Mpls.)	Jerry Sullivan	9-0-0	Single Wing	T (Unb. Line)	347	33	Net Available		227	175
MISSISSIPPI	McComb	Calvin Triplett	9-2-0	T	T (Unb. Line)	249	139	234	58	292	187
MISSOURI	Christian Bros. (St. Louis) Jefferson City	John King John Griffith	8-0-0 9-0-0	Split T Split T	Winged T	169	39	Net Available		184	172
						319	53	332		364	175

MISSISSIPPI	McComb	Calvin Trippett	9-2-0	T	T (Unh. Line)	269	139	234	58	292	187	159	9	
MISSOURI	Christian Bros. (St. Louis) Jefferson City	John King John Griffith	8-0-0	Split T	Winged T	169	39	Not Available		319	53	322	144	172
MONTANA	*Green Falls	Bill Swarthout	7-1-1	Split T		173	77	351	40	391	161	147	6	
NEBRASKA	Omaha North	Carol R. Gast	8-0-0	T	Split T	321	79	304	66	370	182	165		
NEVADA	*Reno	Dick Torchak	8-1-0	T	Single Wing	192	68	200	57	257	186	160		
NEW HAMPSHIRE	Sauderling (Rochester)	Len D'Erico	8-0-0	Winged T	T	270	46	250	47	297	173	160	10	
NEW JERSEY	Hancock Memorial (West New York)	Clyde Anderson Joe Covello	9-0-0	T	N.D. Box & Spread	307	28	253	107	340	182	174	6	
NEW MEXICO	*Carlsbad	Ralph Bowyer	9-3-0	Split T	Variations	311	122	237	109	346	172	170	9	
NEW YORK	Brooklyn Tech. Kingston Tech. St. Joseph's (Buffalo)	Adam Cirillo Willard A. Burke Wm. J. Fitzhenry	7-0-0	Split T	Single Wing Winged T	265	54	340	79	439	192	166	9	
NORTH CAROLINA	*Fayetteville **Greensboro	R. E. Luper Bob Jamison	9-0-2	Split T Double Wing	Split T	168	55	175	72	247	190	175	10	
NORTH DAKOTA	Fargo	Acy Olson	8-0-0	T, Split T	SW, L	240	36	220	17	237	173	170	10	
OHIO	Canton McKinley Freeman Ross	Wade Watts Mal Mackey	10-3-0	T	Winged T	490	16	312	79	391	170	169	8	
OKLAHOMA	*Ada	Elven George	12-1-0	Split T		363	62	346	62	406	184	164	2	
OREGON	*Marshfield (Coos Bay)	Pete Sawick	10-0-1	Split T		404	110	348	33	401	197	183	9	
PENNSYLVANIA	Jeanette Lower Merion Savannah Williamsport	Markley Barnes John Brown John Yon Kandy Thomas Verge	10-4-0	T (Unh. Line) Multiple T T	Single Wing Winged T Winged T	204	33	301	71	372	182	161		
RHODE ISLAND	*Mt. Pleasant (Providence)	Irving Nielsen	10-0-0	Split T	Belly Series	232	89	226	79	305	173	161	9	
SOUTH CAROLINA	Greer	Phil Clark	11-0-0	Split T		340	58	Net Available			181	162	10	
SOUTH DAKOTA	Washington (Sioux Falls)	Grant Heckenlively	9-0-0	Multiple	SW, Belly	263	52	172	67	239	174	155	6	
TENNESSEE	Oak Ridge	Jack M. Armstrong	9-0-0	Single Wing		373	41	299	122	421	173	160	9	
TEXAS	*Abilene *Garland	Chuck Nozar Bill Ellington	14-0-0	T	Winged T	491	62	220	44	384	177	161	7	
UTAH	*East Salt Lake	Grant Martin	10-0-0	T	Winged T	210	13	145	77	222	178	165	9	
VERMONT	Montpelier	George Brown	8-0-0	T Belly	Flanker	235	79	275	28	303	162	151	9	
VIRGINIA	*Washington & Lee (Arlington) Norview (Norfolk)	Bob Walder Pete Souchon	10-0-0	T	SW (Bal. Line) Variations	164	39	204	36	240	175	168	6	
WASHINGTON	Walla Walla	Felix Fletcher	8-0-0	T		241	53	Net Available			176	167	6	
WEST VIRGINIA	Grafton	Rendell McKinney	9-0-1	Split T		229	60	Net Available			183	171	9	
WISCONSIN	Kenosha Neenah	Chuck Jackwhich Tom Porter	8-0-0	Multiple T Split T		241	91	291	122	413	205	172	9	
WYOMING	*Laramie	John Devil	8-0-1	T	Split T	243	65	284	98	344	140	142	7.5	
					National Average	264	64	328	102	182	166	166	7.5	

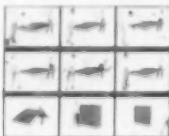
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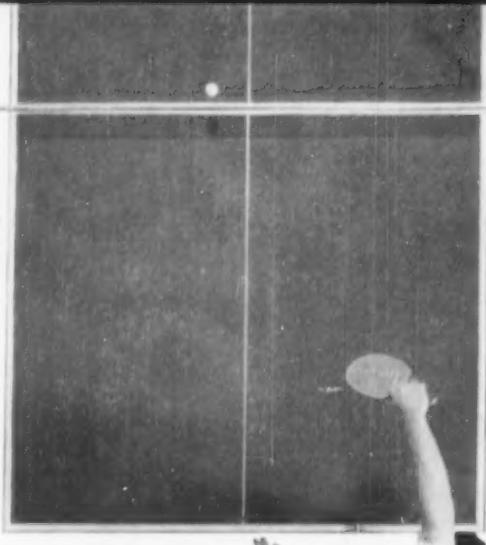


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(Continued from page 58)
game—but still two tds behind McKinley.

Utah champ East Salt Lake allowed only 13 points in 10 games—none while its regular defensive unit was in action. Coach Grant Martin wrote: "From the beginning of the year, our defensive unit believed it couldn't be scored upon." And it wasn't.

Seven of the top-ten rushing teams employed the split T. Here are the figures replete with name of school, type of offense, and rushing yards per game.

1. Downey, Calif. (Tight T)	369
2. Coos Bay, Ore. (Split T)	368
3. Brooklyn Tech, N. Y. (Split T)	360
4. Ada, Okla. (Split T)	346
5. Coral Gables, Fla. (Split T)	337
6. Jefferson City, Mo. (Split T)	332
7. Lawrence, Kans. (Split T)	329
8. Richmond, Ind. (Split T)	323
9. Abilene, Tex. (Tight T)	320
10. Canton, O. (Tight T)	312

It's interesting to note that East Salt Lake, which had such a marvelous defensive record, gained only 145 yards per game on the ground for the lowest mark in the rushing category.

Alameda, Calif., undefeated in 9 games, was probably the only team which tossed the ball as often as 33% of the time. It did present a balanced offense which netted 140 yards per game in the air. Alameda employed a spread T offense. Here are the leading aerial attacks among our group:

1. Alameda, Calif. (Spread T)	137
2. Valdosta, Ga. (Tight T)	136
3. Kenosha, Wisc. (Tight T)	122
4. Oak Ridge, Tenn. (Single Wing)	122
5. Richmond, Ind. (Split T)	109
6. Carlsbad, N. M. (Split T)	109
7. Montclair, N. J. (Tight T)	107
8. Little Rock, Ark. (Tight T)	101
9. West New York, N. J. (Winged T)	101
10. New Britain, Conn. (Winged T)	100

One other offensive category remains—that of total offense. And here it is, broken down as follows—school, yards rushing, yards passing, and total. Split T teams are starred.

1. Brooklyn Tech, N. Y.*	360- 79-439
2. Richmond, Ind.*	323-109-432
3. Oak Ridge, Tenn.	299-122-421
4. Downey, Calif.	369- 50-419
5. Kenosha, Wisc.	291-122-413
6. Valdosta, Ga.	273-136-409
7. Ada, Okla.*	346- 62-408
8. Coral Gables, Fla.*	337- 65-402
9. Coos Bay, Ore.*	368- 33-401
10. Canton, O.	312- 79-391
11. Abilene, Tex.	320- 64-384

On appraising the returns, it immediately became obvious that the question on fumbles was meaningless. Our championship teams lost the ball on fumbles more often than their opponents! The reason for this seemingly erratic play lay, of course, in the fact that they ran better than two plays to their opponents' one; hence the law of averages caught up with them.

Some particularly interesting facts did turn up here. Valdosta, the Georgia Class AA champion, managed to recover 37 of its opponents' bobbles in 13 games; while Edward Little High of Auburn, Me., scored six touchdowns on recoveries of opposition errors.

Colorado Springs, which won the state large school title, made the grade despite the loss of the ball 27 times in 12 games; and three schools—New Britain, Conn.; Coral Gables, Fla.; and West New York, N.J.—were particularly reluctant to part with the ball, each losing possession only four times.

Similarly, the punting statistics proved of little value. The average "champion" punted less than 3 times per game, with powerhouse Richmond, Ind., being forced to kick only 8 times in 9 games. Other schools which were able to make first downs on almost every series of plays and were willing to go for the yardage in fourth-down situations included Montclair, N.J.; Fargo, N.D.; and Kenosha, Wisc., all of which punted less than 1.33 times per game. The punting and fumble statistics were deleted from the accompanying chart.

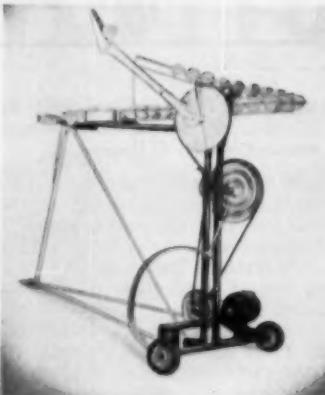
It's impossible to derive any hard-and-fast rules from the weights listed by the participating coaches except to say that football players come in assorted sizes and that today's coaches will take anyone who shows desire and has the initial charge necessary to open holes.

Kenosha and Minneapolis Roosevelt operated behind massive 205-pound lines. Laramie and Neenah, Wisc., had forward walls averaging only 160. None of the four schools lost a game! Eight other schools averaged better than 190 up front, with the national average at 182. Marshfield of Coos Bay, Ore., at 183, Woodlawn of Birmingham, Ala., at 182, and Minneapolis Roosevelt at 180 had the heaviest sets of backs, with Laramie again light at 142. National average was 166.

Most of the coaches seem to favor two-way football. Each time the ball changed hands, the coaches inserted three or four defensive specialists and left the balance of the

(Concluded on page 67)

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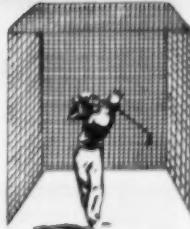
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New Books on the Sport Shelf

- **THE GAME PLAYS OF BASEBALL.** By Al Niemiec. Pp. 58. Illustrated—diagrams. Kirkland, Wash.: Al Niemiec. \$2.

WITH ten years of pro baseball behind him, including a cup of coffee with the Red Sox and coffee and doughnuts with the Athletics, Al Niemiec certainly knows what the diamond sport is all about, and his book clearly reflects it.

Compounded into its sixty 11 x 8½ pages are all the fundamental plays of the game. Each play is clearly diagrammed and analyzed authoritatively from both the offensive and defensive standpoints.

The simplicity and clearness of the explanations makes it a fine textbook, enabling the coach to eliminate a lot of time-consuming work on play situations and to devote the time saved to hitting and fielding.

Copies may be ordered from Al Niemiec, c/o The Craftsman Press, 2030 Westlake Ave., Seattle 1, Wash.

- **THE MODERN OLYMPIC GAMES.** By Dr. Ferenc Mezo. Pp. 470. Illustrated. New York: SportShelf. \$5.50.

WRITTEN at the request of the International Olympic Committee, this book offers the detailed history and results of the 60 years of the modern Olympics, up to the 1956 competition at Melbourne.

The well-arranged tables, which comprise a good portion of the book, contain the names of the first three winners in each event, their performances, and the Olympic and world records. All this is supplemented with 100 exciting photos.

Published in three languages—English, French and German—a limited supply of the English edition is available from SportShelf, 10 Overlook Terrace, New York 33, N.Y.

- **PHYSICAL EDUCATION (Student and Beginning Teaching).** By Clyde Knapp and Ann E. Jewett. Pp. 300. New York: McGraw-Hill Book Co. \$4.75.

WRITTEN for student teachers, beginning teachers, and administrators, this book will help young teachers anticipate, understand, and solve the problems that will confront them.

Part 1, "Teaching Physical Education: Work and Preparation," presents the scope of the teaching responsibility and discusses needed preparation; Part 2, "Student Teaching in Physical Education," assists the student teacher and those who work with him in achieving results from preliminary teaching experience; and Part 3, focuses upon the problems of a beginning physical ed teacher.

Special topics and material unusual in this sort of text include sample units and lesson plans, observation guides, and special problems facing beginning teachers.

- **INTERNATIONAL TRACK AND FIELD DI-
GEST.** By 50 Famous Coaches, Trainers,
etc. Pp. 260. Illustrated. Ann Arbor,
Mich.: Champions on Films. \$5.

ONE of the meatiest, most magnificent books ever published on track and field, this remarkable publication represents the work of 50 famous coaches, doctors, trainers, and physiologists from five continents. It offers the complete proceedings of the fabulous world clinic held last June in California.

Every facet of the sport is analyzed in detail by an internationally renowned expert, and illustrated with superb action sequences. Look at the stuff you get:

Gosta Holmer, Swedish coach, distance running; Cornelius Warmerdam, pole vaulting; Mikeo Oda, Japanese Olympic champion, the hop-step-and-jump; Don Canham, high jump; Oliver Jackson, coach of Bobby Morrow, sprinting. Among the other 30 famous-coach contributors are Larry Snyder, Clyde Littlefield, George Eastman, Jesse Mortensen, and Herb Kenley.

All proceeds from the sale of this book will go to the National Collegiate Track Coaches Assn. fund for the second International Clinic in Rome (1960). For your copy, order from Champions on Film, 816 South State Street, Ann Arbor, Mich.

- **EASY STEPS TO SAFE SWIMMING.** By Evelyn D. McAllister. Pp. 60. Illustrated—drawings. Cortland, N. Y.: Arcraft Press. \$1.25.

DESIGNED for the general public, this book offers a simple, clear, authoritative guide for learning the correct swimming strokes and efficient breathing for each.

Illustrated with more than 150 drawings, the book nicely dissects the fundamentals of the following strokes: beginner's crawl, side stroke and side overarm, elementary back and back sculling strokes, treading water, breast and butterfly breast strokes, trudgen and trudgen crawl, American crawl, and racing back crawl.

The book also covers getting used to the water, elementary diving, and safety practices and rules. Both beginners and advanced swimmers will derive considerable value out of the suggestions for using the plastic floating devices and other equipment such as swim fins, snorkles, etc.

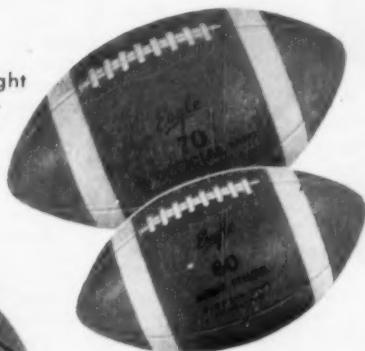


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- **ARCHERY.** By Howard Wiseman and Fred Brundle. Pp. 112. Illustrated—photos and drawings. New York: Dover Publications. 65¢.

TWO of Great Britain's foremost authorities on archery pool their talents in a simple but invigorating manner in this excellent handbook. They trace the development of the sport from caveman to commando, then offer a fine analysis of the techniques.

They touch every base including the elements of making equipment, drawing and holding, nocking, loosing, aiming, etc. Also covered in detail are competitions, the Grand National Archery Society, archery clubs, variations with the bow, archery in other countries, records, and a glossary of terms.

Rules Guides. Just off the press, ready for immediate delivery, are the 1957 Official NCAA Track and Field Guide and the 1957 Official NCAA Lacrosse Guide. Each is available for a buck from the National Collegiate Athletic Bureau, Box 757, Grand Central Station, New York 17, N. Y.

NEW HOCKEY FILM

- **HOW TO PLAY HOCKEY** (8 Reels on Fundamentals and Team Play). 16-mm. sound. Running time, 65 min. Produced in Canada by Crawley Films Ltd. Distributed in U. S. by American Hockey Coaches Assn. \$300.

PERHAPS the greatest instructional film ever produced on ice hockey, this set of 8 reels is a positive must for anyone concerned with the welfare and improvement of the sport.

The 8 reels cover: Skating (9 min.), Stickhandling (6 min.), Passing (6 min.), Checking (6 min.), Shooting (8 min.), Goaltending (8 min.), Offensive Teamplay (11 min.), and Defensive Teamplay (11 min.).

The photography is superb, the technique just about perfect. The films are ideal for coaches on every level of play. For orders or further information, write to American Hockey Coaches Assn., c/o Edward Jeremiah, Sec.-Treas., Hanover, N. H.

L. P. BASEBALL RECORD

- **BASEBALL TAUGHT BY THE STARS OF THE BROOKLYN DODGERS.** A 33 1/3 Long Play Record and Picture Book. Running time, 40 min. New York: Pictures, Inc. \$5.98.

MADE on location at Ebbets Field, this long playing record and picture book represent an artful, creative blending of words and pictures. The book is 10 1/2" by 8" in size and is chockful of large, sharp instructional photos, covering the basic principles expounded on the actual recording.

The recorded instructions and the photos complement one another. While listening to the instructions, you look at the pictures. The Dodger stars come across beautifully. Jackie Robinson (now retired) covers infield play and

bunting; Roy Campanella, catching; Clem Labine, relief pitching; Duke Snider, outfielding and batting; Gil Hodges, first base; and Carl Erskine, pitching.

All of the instruction is narrated crisply and authoritatively, with no childish shenanigans. The stars stick to the fundamentals, covering each skill in nice detail. Every young ball player can benefit enormously from this imaginative look-listen-and-learn educational device.

Football Champions

(Continued from page 63)

regulars in. There were variations, of course. Leo, Chicago city champ, used eleven men each way. Elvan George, an eminently successful tutor in Oklahoma, reported that by season's end he was using only two boys both ways. John Brennan at Lower Merion, Pa., stated that he had punting, placekicking, and receiving line-ups in addition to offense and defense units! He used four boys both ways.

Replies of the coaches were most interesting and complete. Here are some:

Hubert Etchison, Richmond, Ind.: "We feel that good boys should play both ways. Purdue rostered four Richmond boys this year. We hope to continue our prestige in college football with several boys from this year's eleven."

Jack Fisher, Weymouth, Mass.: "Our team was first in history to play a complete Class A schedule without a loss."

Adam Cirillo, Brooklyn, N.Y.: "Our student body represents a highly select one from applicants with high scholastic averages."

Willard Burke, Kingston, N.Y.: "Had a soph halfback who scored 15 td's and gained 863 yards in only six games."

Bob Jamieson, Greensboro, N.C.: "I believe all boys should play both ways."

Bob Waldorf, Arlington, Va.: "Won three games on field goals, one on extra point. Won our last game on final play, 3-0, on 32-yard placekick. Ball hit crossbar and toppled over for state championship."

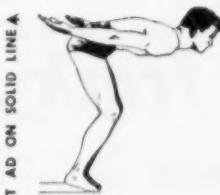
Dick Trachok, Reno, Nev.: "Four arch rivals held to net gain of less than 50 yards rushing and passing."

Chuck Moser, Abilene, Tex.: "Gregory (Scholastic Coach All-American) kicked 122 of 130 extra points in two years. Two halfbacks averaged over 10 yards per carry for two years."

John YonKondy, Swoyersville, Pa.: "Only 165 boys in school. We used 21 on offense and defense regularly—33 when we had a three-touch-down lead."

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COACHES' CORNER



What Is a Track Man?

By ERNIE GORR, Track Coach, University of Omaha

- Somewhere between the crawling stage of a young boy and the walking stage of an old man there is the ambitious individual called a runner, or track man. Track men are as varied as any other athlete or individual. They are tall, short, stocky, skinny, willowy, springy, or strong, and all have a similar desire: to excel by breaking records or force someone else to break records.

- They do not get all the recognition of a football, basketball, or baseball player, but they still have the courage to continue to run, jump or throw. They know that with more work sometime they will be up there at the top and their efforts will be recognized by others than their coach, or dad and mother.

- A track man starts slow and finishes fast; or starts too fast and barely finishes. He will jump or throw great distances in one meet and slip to the basement in another. When the competition is tough, he may outdo himself; or when it is weak, he may just perform.

- Track athletes are composites—they eat as if they're on a diet, or gorge as though they've never been fed. They are future Olympic candidates—the coach hopes.

- You can find track people anywhere. They will be running over hill and dale, cinder, board, and dirt tracks, or on streets and roads. They run, hurdle, jump, throw, and vault at any age. Each time they strive to outdo their own previous efforts or the other fellow's.



- He is always friendly and courteous, and makes friends with his opponents. But in the true American manner, he'll try to beat him. His race, religion, and social position mean nothing, because it's how fast he runs, how far he jumps, or how far he throws that measures him. He's a team man. He performs as an individual, but he's a great team man.

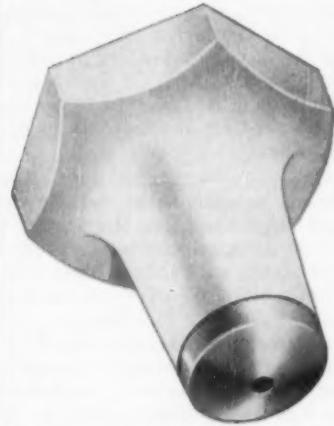


- He practices harder, works longer, and is bent on bringing recognition to his school. His performance is never a relative sort of value because it's always measured and recorded in black and white. He knows how good he is or isn't but he's always trying to be—a champion.

- Track men like movies of themselves, still pictures of their performances, long trips, short trips, running in nice weather, records, outstanding performances, stop watches, tape measures, and the pleasant feeling of doing something better than they've ever done before. They would rather not run lots of wind sprints, or overdistance running; they aren't much for the wind, rain, or cold, but lying in the sun is a most pleasant experience.

- A track man is really great—he runs because he loves running, and will work for hours all alone. He may be defeated time and time again, but he keeps on working to be a winner some day. He may not be a champion, but when he performs he hopes that if he can't break the record, he'll make his opponent do so.

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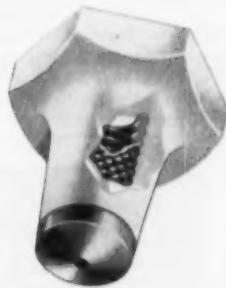


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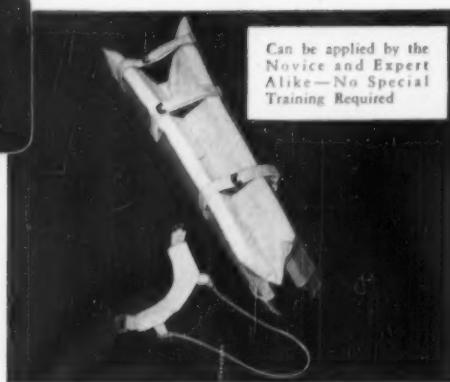
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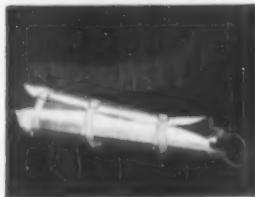


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"Here Below"

(Continued from page 5)

But even more startling is the fact that beardless high school athletes are now bettering the marks of the world record-holders of the Jim Thorpe era (1912). Of the 12 world standards of that day, no fewer than nine have been shattered by modern schoolboy athletes!

Our swimmers also wash away records practically everytime they stick their toes into the water. Of the 25 assorted college records, 24 have been established since 1951! What's more, 12 of them were set in 1956 and five in 1955!

Our eight-oared crews and weight-lifters are international champions. Our professional boxers hold six of the eight world championships. Our football and basketball teams are paragons of speed, skill, and stamina—immensely superior to their counterparts of the '20s and '30s.

The physical fitness pessimists attribute these feats to an aristocratic athletic "type." This is nonsense of the purest bray serene. Improved training is part of the answer. Superior coaching is another. But the fundamental reason lies in the tremendous increase in athletic participation.

This trend is clearly reflected in our interscholastic sports programs. The statistics are positively awe-inspiring. Over the past ten years alone, high school football has soared from 7,484 to 9,694 participating schools, basketball from 17,024 to 18,639 schools, baseball from 5,236 to 12,374 schools, and track from 7,415 to 11,511 schools.

The same upward spiral prevails in the so-called minor sports. And for the students incapable of varsity competition, there are the ever-expanding intramural programs. "Sports for All" has become a lodestar for our high schools and colleges, and it's being implemented more and more through the intramural program.

One of the most beneficial aspects of our varsity, intramural, and physical education programs is the increasing accent on sports with carry-over value, such as swimming, tennis, golf, bowling, skating, and skiing, which can be enjoyed throughout one's lifetime.

For youngsters on the pre-high school and after-school levels, the opportunity for sports participation has soared by leaps and bounds. Mushrooming rapidly are the nationwide baseball programs fostered by Little League, Babe Ruth League,

American Legion, and Pony League in the summer, and Biddy Basketball and Midget Football in the fall and winter. These vast programs attract millions of youngsters every year.

BUT, you may be wondering, if the American youngster is now taller and heavier and is participating in so many more sports, why did he fare so poorly against the European youngster in the Kraus-Weber Test?

A detailed appraisal of the Test reveals that it hardly constitutes a yardstick to physical fitness. About all it measures is abdomen and lower back strength. Its battery of six tests contains no coordination test, no arm and leg strength test, and no agility test. Is this a fair index for comparing fitness of American and European youngsters? Many of our foremost physical educators believe not.

Physical fitness experts have also discovered that the "unfitness" revealed by the Kraus-Weber Test can be quickly remedied. At Whitcomb High and Junior High School at Bethel, Vt., the entire student body was subjected to the Kraus-Weber Test, and almost 46% of them failed. The principal then ordered 20 minutes a day of compul-

sory mass exercise for all. Six months later the students were re-tested. This time only 6% failed—a lower rate of failure than that recorded by the European youngsters.

Many people hailed the Whitcomb High School experiment as a shining example for the rest of America to follow. But the advocates of safe-and-sane balanced programs remained skeptical. "Is the ability to touch your toes really so important to the nation's fitness?" they asked.

Physical education experts emphasize that fitness doesn't concern muscles alone. A healthy youngster is fit in three ways: physically, emotionally, and socially. That's what the experts call *total fitness*.

However, the nation's experts agree on one point. A physical fitness problem may not now exist, but the softness of modern living may create one. And friend and foe alike credit the controversial Kraus-Weber Test for awakening America to this potential threat.

At the President's Conference on Fitness of American Youth last June, Vice-President Richard Nixon pin-pointed the areas needing definite and immediate attention. Among his more vital points were these:

1. Fewer than 50% of our high

school students are exposed to physical education programs.

2. More than 90% of our elementary schools have no gymnasiums.

3. Only 1,200 of America's 17,000 communities have full-time recreation leadership.

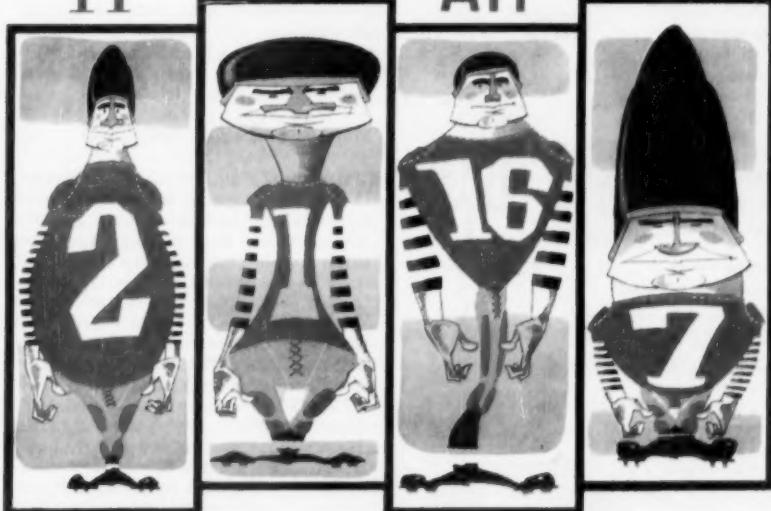
4. About 40% of the men in our Armed Forces during World War II were unable to swim 50 feet.

5. Almost 90% of the nation's elementary schools have less than the five recommended five acres of land necessary for essential play areas.

If the President's Council of Youth Fitness can provide the needed facilities, America may produce a physical specimen the likes of which the world has never seen before. Who knows, maybe they'll even pass the Kraus-Weber Test!

Summing up, then, if more kids are participating in more sports than ever before in our history . . . if Americans are taller and heavier and live longer than ever before . . . and if our athletes are shattering all sorts of records in awe-inspiring profusion, how can anyone dare to claim that America is deteriorating into the softest nation in the world and that our youngsters are physically inferior to the youngsters of other countries?

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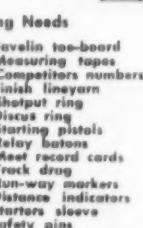
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National Federation Press

Cheerleading Mores

If your cheerleading manners are slipping but not actually showing, better anchor them before you too become guilty of bad manners. From the many complaints being received on the subject of "courtesy among cheerleaders," the problem is one deserving of serious consideration. Whether your cheerleaders are or are not guilty of violating any of the courtesies mentioned below, now is the time to take inventory.

These complaints are passed on by Mrs. Stella S. Gilb, University of Kentucky faculty member, in the *Kentucky High School Athlete*:

1. Many visiting cheerleaders are abusing the privilege of being guests by dashing onto the floor in order to give the first yell. (After the first few times of allowing the visitors the courtesy of giving the first yell, the privilege should be alternated.)

2. Visiting cheerleaders are choosing such long, drawn-out yells during short time-out periods as to leave no time for the host cheerleaders.

3. Host cheerleaders are being negligent in greeting visiting cheerleaders and providing adequate facilities for the checking of personal belongings and proper seating space.

4. Cheerleaders are trying to drown out opponents by yelling at the same time.

5. Coaches and officials are complaining over the delay of game caused by cheerleaders who begin a formation well in the middle of the floor just as a time-out ends.

All-Star Games

MOST national schoolmen groups are on record as opposing promotions of an All-Star nature and involving either high school athletes or athletes whose prestige has come from recent participation in the high school athletic program. A few such promotions which involve athletes from only one state or, in one or two cases, athletes from two adjoining states, have been held for a number of years; and some of these are being continued without active opposition by the school groups which are affected.

Currently, there's only one basketball promotion and one football promotion of nation-wide character. The football promotion hasn't been held on a school campus, but college coaches have participated. The basketball promotion has been held in a college gym with high school coaches participating.

To the extent that school facilities or manpower are involved, these two contests are affected by the joint high school-college regulation which provides for action by the National Federation on applications for sanction

of such proposed contests. Neither the nation-wide basketball promotion nor the nation-wide football promotion is being sanctioned. It's possible that one or both will be continued even though disapproved by the school groups. If either is continued, it's hoped that no school facilities nor school staff from either high school or college will become involved.

Regulations concerning this matter vary in the different state high school associations. Both the N.C.A.A. and the National Association of Intercollegiate Athletics are on record as opposing use of facilities or manpower from any member college.

Ordering Early

AN inch on Washington Monument is infinitesimal, but an inch on a man's nose is colossal. This truism is related to an athletic equipment problem. Delay by one school in ordering its equipment is a minor nuisance, but if 20,000 schools follow the same practice, it creates a bottleneck for equipment manufacturers and school athletic departments.

Quality of equipment and cost are influenced. Everyone in the athletic program is affected. Most school athletic equipment is custom-built to the individual and a specific need. This requires specialists who can work throughout the year rather than during a short pre-season period.

In this highly competitive field, the cost to schools is regulated by cost of materials and labor. Increases or reductions depend on costs of these items and on whether a steady flow of production can be maintained.

It's good horse sense for school men to help eliminate waste motion. It's seldom necessary for a school to delay its order until near the start of the season. Except for a few emergencies, proper planning will permit the ordering of next season's equipment several months before it is needed. This insures better equipment, less cost and a better fit.

A rush job is seldom satisfactory. A school which insists on rush production hinders itself and all of its neighbors. Craftsmen need time to do a creditable piece of work.

In Navy parlance, "Now hear this." For the athletic director: To have your equipment RIGHT and on TIME, order it EARLY. For the coach: To avoid biting your nails TODAY or getting an ulcer TOMORROW, order your athletic equipment YESTERDAY. For the purchasing agent: In a period of inflation, delay in ordering is poor business;—prices may remain the same or they may go up, but it's a poor gamble to expect them to go down. Competent athletic supervisors and equipment managers act accordingly.

Each school owes it to itself, to its neighbors and to the industry to get this job done—not next week or next month—now!! Next football season and basketball season are just around the corner.



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European Controlled Interval Method of Distance Training

(Continued from page 24)

the 6-miler might at the same stage of training use 10 x 440 in 62 seconds as a speed workout, and perhaps within the same week do 15 or 20 x 440 at a pace 6 seconds slower per 440 as an endurance workout.

It's important for the coach to see that competitive situations don't develop in practice when two or more men are working together, since the spirit of competition and the strain of all-out effort must be reserved for the track season, with the 8-month training period reserved for the gradual development of condition.

In this respect, if the coach feels that cross-country is a must, the races must be run in the spirit of fun and of just another workout, taking one day of rest prior to and one day of light jogging following the race, then resuming full-scale training.

The coach shouldn't be appalled by the funeral pace at the start, nor should the runner be allowed to run his intervals any faster than the normal margin of error. It must be remembered that the work-load being assumed is tremendous, that the track season is a long way off, and that the pace will gradually and relentlessly be increased.

The early months are the time for building the muscles of the legs, heart, and breathing apparatus, for increasing the energy reserves of these muscles, and for conditioning the body and mind to perform smoothly in the presence of the implacable enemy—Fatigue.

TRAINING DURING COMPETITION

After 8 months of interval training, the runner will be ripe for competition, eager to race mentally, and physically in his greatest condition. He'll likely return the best effort of his career in his first race. (recall Bannister's sub-4 minute mile.)

Because of this, training must now change radically, and no more attempts are made to develop further stamina. The runner does fewer, shorter, and faster intervals (2-4 660's, 4-6 quarters, 6-8 220's) at near maximum pace and both Phases 1 and 3 are shortened.

Workouts must become sessions of play, void of both the drudgery of controlled intervals and the press of competitive effort—enough to merely maintain stamina, sharpen speed, and regain the strength and desire spent during the fire of competition.

Depending upon the importance and

distance of the race, a man should rest 1-4 days before and 1-2 days after competition, the longer and more taxing 3-6 mile runs requiring the greater rest. At best, the runner indulges in only very light jogging and speed play during this period.

A workout used by some Europeans during this maintenance period consists of 3-4 runs of from 440 to 660 yards, in which the first 2/3 to 3/4 is run at a race pace and the latter 1/3 to 1/4 at a very fast sprint, in an effort to simulate race conditions and improve a runner's "kick." For example, 660 yards might be run at 60-second pace to the quarter, with the last 220 run in as close to 25-26 seconds as possible.

TRAINING TIPS

"A man is only as good as the food he eats," certainly applies to the interval runner. A high-calorie, high-protein, high-vitamin diet is essential. The great energy expenditure requires a high caloric intake (carbohydrates), otherwise dietary protein or body muscle mass is burned for energy.

The process of developing stamina entails the breakdown and rebuilding of muscles, heart, and liver. The body must be supplied with the building blocks (protein) and catalysts (vitamins) for the latter process. Hence, the diet must include protein which cannot be substituted for—namely fish, eggs, cheese, and other milk products, and meat daily, and liver at least once weekly.

Fresh fruits, vegetables, and whole-grain cereals supply vitamins and carbohydrates. Vitamins should probably be taken as a dietary supplement in view of the high energy and tissue turnover. Natural fats are eaten as desired.

Moderate restriction of carbohydrate intake coupled with the hard training solves any overweight problem. While any distance runner should be lean and hard, weight loss past the optimum point, especially if associated with growing sense of fatigue, indicates overwork and the need for an additional day's rest, plus an increase in the diet. Excess poundage is excess baggage, and must be trimmed off.

Physical rest at night is an absolute must—9-10 hours are the minimum. Since it's the body rather than the mind which is fatigued, physical rest in bed is as good as sleep, so that the college student should be able to retire at an early hour and spend 2-3 hours studying while completely resting his body.

ADAPTATION TO YOUNGSTERS

While long-distance running is recognized as an "old man's" game and world records are and will continue to be held by men in their middle and late 20's, even high school runners can profit from interval training, provided the workouts are scaled down to their

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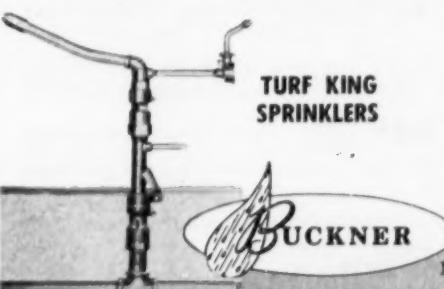
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ability and the proper judgement in work-load exercised.

It's assumed that young college and high school runners will have the guidance of an experienced coach, and that they won't attempt interval training until they have at least put in one or two seasons to condition themselves and demonstrate the physical and mental aptitudes for interval running.

Physical maturity and not chronological age seems to be the more important factor, so that fixed rules for total training distances cannot be made. In general, however, the men should follow the same year-around program with the daily mileage proportionate to their maturity, past experience, and ability.

Robert Chambers, track coach at San Pedro (Calif.) High School, has been using interval training with daily workouts of about six miles for his older runners, and has two juniors running the mile in 4:34 and 4:35 and a cross-country team which swept league and all-city honors. Ron Clark of Australia, an interval runner, ran the mile in 4:06 and 2 miles in 8:56 while just barely 19 years of age!

INTERVAL RUNNING PSYCHOLOGY

Not the least important factor in the Controlled Interval Method is the subtle psychology underlying the system. Since a man's program is based upon previous performance, he commences at levels easily within his reach and, following the progression chart, gradually increases the difficulty of his workouts.

Each day presents a goal which is attainable, giving him confidence, while the visible day-by-day and week-by-week progress maintains interest and encourages him. Soon the program itself becomes exciting and challenging.

After the 3-mile warm-up, even the first interval is begun with a little fatigue; and the alternating intervals and rest periods subject both the body and mind to repeated episodes of performing under fatigue. Soon the man learns to ignore fatigue and loses his fear of the fast pace. He knows that even when tired he can "kick" at the end, for that's just another familiar interval.

Repeated short intervals run at faster-than-race pace develops greater speed and stamina than previous methods. Distance running is a test of stamina more than speed, but stamina is just the ability to maintain "basic speed" over prolonged distances.

The flexibility of the program is incomparable, since schedules and pace depend completely upon the individual's basic proven ability. They're set up week by month according to his needs, and are designed for only one man at a time. However the man runs, he must continue to improve, because the controlled progression of times—the only rigid part of the system—insure more difficult workouts.

Some type of training plan is a must. Runners cannot "run just as they feel" as advised by John Landy. Novices will overwork when fresh and run themselves into the ground, then underwork when tired. Landy forgets he put in four years of this identical interval running under a stopwatch before reaching his present advanced status. The novice, if he's to improve, needs some system that will provide workouts of increasing difficulty.

A WORD OF WARNING

Although runners at any stage of the game will benefit from interval training, a coach may ruin as many good men as he develops if he subjects them to the strenuous full-scale program regardless of their disposition and inclinations. Only the man who desires to be a champion and has the will to put in the long hard hours of daily work can be expected to follow such a long-range program and run in all weathers. However, there are many such individuals among our trackmen.

Don't underestimate the need to start at the beginning of the 8-month training program and adhere closely to the prescribed pace, for it's absolutely necessary to develop the required stamina and strength of muscle and ligament before imposing the cruel burden of the later stages of training.

Attempts to break into the middle of the program or to increase pace faster than indicated can produce a variety of unhappy incidents—namely, development of accumulative physical and mental fatigue (become stale), of painful feet, ankles and muscles that prevent training, or of muscle ruptures or "pulls" in the midst of a workout. These events only discourage the runner, causing him to lose faith in both the program and his coach.

While an experienced runner can design and follow his own schedule, the help of a good coach to collaborate and furnish objective thinking is invaluable.

REBUTTAL OF OBJECTIONS

It's difficult to understand the resistance met by interval training in the light of its European successes. Many reasons have been advanced to excuse the American from trying it, all of which are untrue or merely beg the issue.

A major objection has been the time. While it's true that a 9-mile session will consume two full hours, this is less than a football team will practice, and even trackmen may dally away more time "laying around" or doing prolonged calisthenics. (Oddly enough, neither author has heard of a distance runner being required to touch his toes during the race.)

If the runner proceeds through the three phases in an unhurried but businesslike manner, the program is

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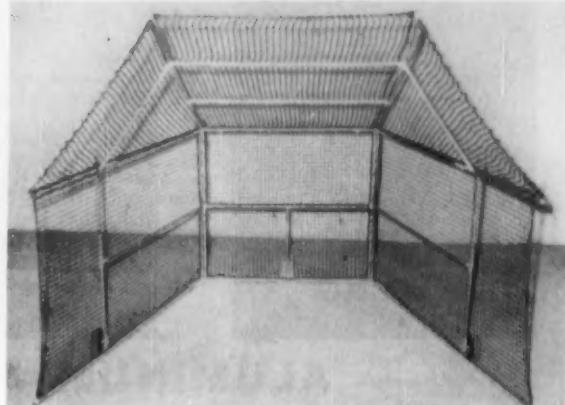
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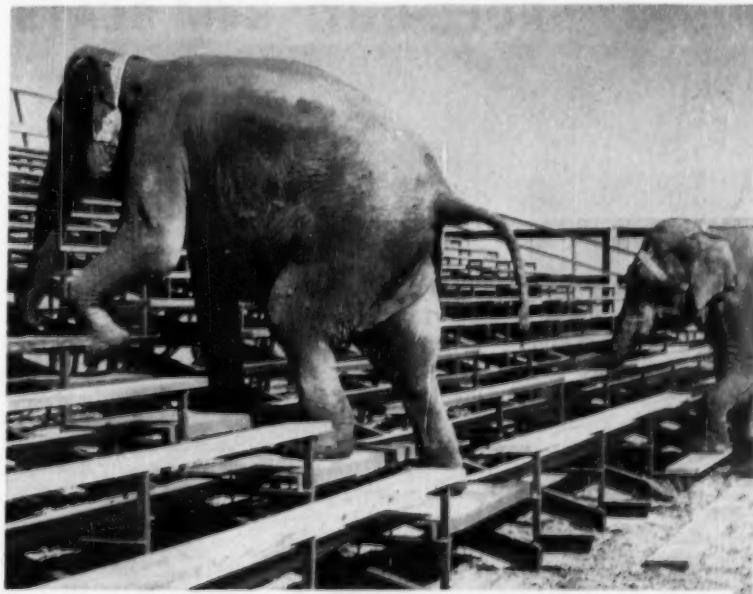
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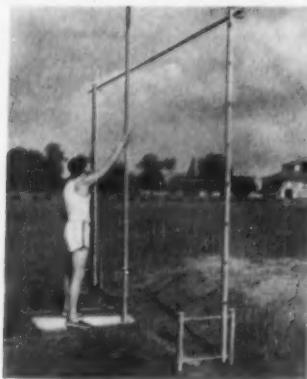
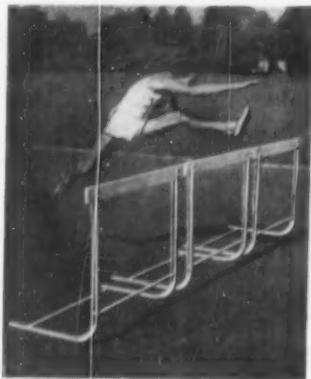
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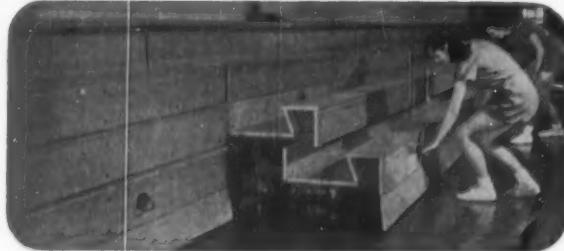
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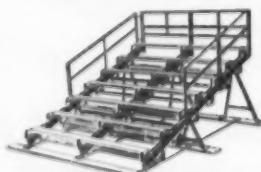
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no more demanding time-wise than old training methods, and either student or factory worker may use it.

The program has proven not too strenuous. Zatopek and other runners represent testimony to the findings of medical cardiovascular research which indicate the healthy human heart is invulnerable to exercise, that the "athletic heart" and the "burned-out" runner are myths, and that "staleness" is largely a mental condition or accumulated fatigue from improper training methods.

The system is not new and unproved. It's at least 20 years old, and results dating from the performances of Harbig to the present crop of new world records offer adequate documentation of the successes achieved with this coaching method.

A man doesn't have to be a fanatic or recluse to train by this method—merely dedicated. Sacrifices are always necessary with any training program, and the rewards are always proportional to the effort. Simple moderation of daily diet, rest, and pleasures plus the will to train daily is all that's required.

The mass of other arguments merely beat around the bush. The fact that Americans ride in autos instead of walking or bicycling doesn't handicap our sprinters and middle-distance runners. True, our youth quit competitive sports after finishing high school or college, and we don't have a strong system of club teams. But this is a matter of incentive—a man can compete if he wishes.

Our high standard of living with its financial burden has been blamed. But our men do not work any longer per day than do many Europeans, who somehow find time. Alibis all, these.

Whatever the case, the bitter fact remains that American distance runners no longer face Europeans on equal footing, and they will not until they adopt some form of rigorous interval running involving a year-around planned program.

"If we cannot beat them, we must join them."

In summary, the Controlled Interval Method gives the American coach a specific, tangible and logical system that will not harm the runner. Like any system, it's only as good as the men who practice it. And there's no guarantee that a given runner will become a Sandor Iharos.

Miracles cannot be expected, but after 2-3 years of faithful and patient hard work, during which time the man will develop ever greater stamina and see gradual improvement, any runner can expect to achieve his greatest potential, be that what it may.

For other informative articles on controlled interval training, refer to Ken Doherty's two-part series, "Interval Training," in Feb.-Mar. 1956; A. S. Lewis' "Principles of Interval Training" in Nov. 1956; and Don Canham's "New Middle Distance Training Concepts" last month.

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(37)
 Catalog of Adirondack Baseball Bats

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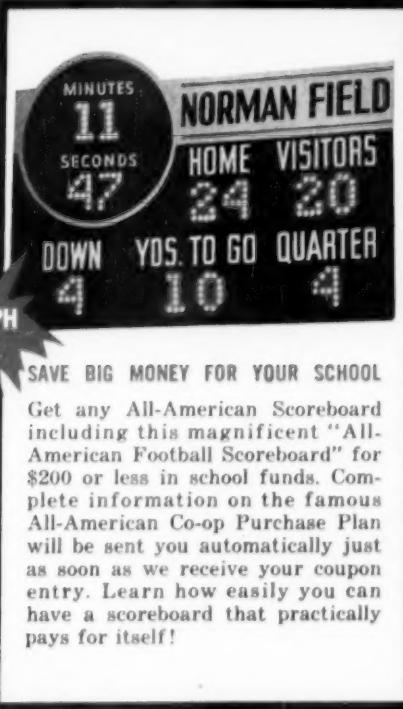
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ADVERTISERS INDEX

AALCO MANUFACTURING COMPANY	48
AIR PAD & BRACE COMPANY	65
ALL-AMERICAN SCOREBOARD CORPORATION	3rd Cover
ALUMINUM ATHLETIC EQUIPMENT COMPANY	78
AMERICAN PLAYGROUND DEVICE COMPANY	79
AMERICAN WIRE FORM CORPORATION	70
ARNETT, RICHARD W.	15
AUDIO EQUIPMENT COMPANY, INC.	62
AUSTIN FENCE COMPANY, INC.	77
BAT-TEE COMPANY	73
BECTON, DICKINSON & COMPANY	33
BIKE WEB COMPANY, THE	17
BRISTOL-MYERS COMPANY	74
BROOKS SHOE MANUFACTURING COMPANY	18
BROWN, M. D., COMPANY	75
BUCKNER MANUFACTURING COMPANY	75
CHAMPION KNITWEAR COMPANY	39
CHICAGO ROLLER SKATE COMPANY	34
CHRYSSTAL, CHARLES B., COMPANY	38
COSOM INDUSTRIES, INC.	23
DENISON, C. D., ORTHOPAEDIC APPLIANCE CORP.	67
DRIVER, H. I., COMPANY	80
DUCOMMUN, M., COMPANY	52
DUDLEY SPORTS COMPANY	63
DU PONT, E. I., DE NEMOURS & COMPANY	59
EAGLE RUBBER COMPANY, INC.	65
EARLVILLE BLEACHER CORPORATION	80
FAIR PLAY MANUFACTURING COMPANY	14
FEATHERLAX CORPORATION	69
FENNER-HAMILTON COMPANY	62
GENERAL SPORTCRAFT COMPANY	2
GYMNASTIC SUPPLY COMPANY	66
HARVARD TABLE TENNIS COMPANY	51
HILLERICH & BRADSBY COMPANY	41 (Insert)
HILLYARD CHEMICAL COMPANY	4
HOUSE OF HARTER	76
HUNTINGTON LABORATORIES, INC.	35
HUSSEY MANUFACTURING COMPANY	78
IVORY SYSTEM	4th Cover
JAYFRO ATHLETIC SUPPLY COMPANY	66
JENNISON-WRIGHT CORPORATION, THE	25
K. & P. ATHLETIC COMPANY	64
KING-O'SHEA	56
MacGREGOR COMPANY, THE	47
MCLAUGHLIN-MILLARD, INC.	37
MAGNA MANUFACTURING COMPANY, INC.	62
MAPLE FLOORING MANUFACTURERS ASSN.	1
MASTER LOCK COMPANY	73
MEDART, FRED, PRODUCTS, INC.	29
MISHAWAKA RUBBER & WOOLEN MFG. COMPANY	19
NADEN INDUSTRIES	52
NATIONAL SPORTS COMPANY	72
NISSEN TRAMPOLINE COMPANY	31
OCEAN POOL SUPPLY COMPANY	67
OHIO ATHLETIC SPECIALTY COMPANY	69
ORTHOPEDIC FRAME COMPANY	70
PENNSYLVANIA ATHLETIC PRODUCTS DIV. THE GENERAL TIRE & RUBBER COMPANY	54
PLAYTIME EQUIPMENT CORPORATION	24
PRECISION ATHLETIC GOGGLE COMPANY	46
PRENTICE-HALL, INC.	64
QUAKER OATS COMPANY	26-27
RAWLINGS SPORTING GOODS COMPANY	3
REEVES STEEL, INC.	77
REMINGTON ARMS COMPANY, INC.	55
RIDDELL, JOHN T., INC.	2nd Cover
ROBBINS FLOORING COMPANY	76
SAFWAY STEEL PRODUCTS, INC.	49
SAND KNITTING MILLS CORPORATION	41
SCOREMASTER CORPORATION	74
SEAMLESS RUBBER COMPANY, THE	43
SNITZ MANUFACTURING COMPANY	57
SPALDING, A. G., & BROS.	45
SPANJIAN SPORTSWEAR	66
STERLING NET & TWINE COMPANY, INC.	63
TRACK & FIELD OF SLIPPERY ROCK	72
TRAVELRAIN POWER SPRINKLER COMPANY	70
WELLS, J. W., LUMBER COMPANY	41
WIGWAM MILLS, INC.	30
WILSON SPORTING GOODS COMPANY	6, 21, 71

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